

The probabilistic network consisted of 70 stations in the Salt/Licking unit and 55 stations in the Cumberland unit (Figures 3-7 through 3-10). Macroinvertebrates were collected once at each station from late spring to early fall. Habitat also was characterized at each site. EPA provided sampling locations as latitude/longitude coordinates. According to EMAP protocols, sampling was conducted in a reach around the coordinates equal to 40 times the width of the stream channel. Sampling methods followed those of the DOW biological programs (Kentucky Division of Water 2002b). However, because available habitat was not necessarily similar to that sampled by usual sampling protocols that rely on sampling all habitat types (riffle, pool, run), best professional judgment was used to interpret results from sampling reaches dominated by pool habitat at a few sites.

In 1991, the DOW began a Reference Reach (RR) program to gather data from the state's least impacted streams. Biologists first identify potential least impacted waters representative of geographic regions of the state known as ecoregions. Then, data on chemical water quality, sediment quality, fish tissue residue, habitat condition, and biotic conditions are collected to (1) define the potential environmental quality for the streams of a particular ecoregion; and (2) allow other streams in the same ecoregion to be compared to the reference condition. Data from the reference reach program will provide the basis for the development of narrative and numerical biocriteria for the various ecoregions of the Commonwealth. Fifty-five stream sites from seven proposed ecoregions were initially sampled in the spring and fall of 1992-1993. Since that time, many more potential reference reach streams have been sampled. Some were adopted as reference reach streams; others were rejected because they did not possess adequate quality to represent a least impacted condition. Currently, there are 52 RR streams totaling 490 miles throughout the Commonwealth (Table 3-3). Another 80 streams totaling 399 miles will be considered for inclusion during the upcoming triennial review of water quality standards. There are 20 existing and 44 proposed RR streams in the river basins covered in this report.

<u>River Basin</u>	<u>Current RR Streams</u>	<u>Proposed RR Streams</u>
Licking	3	4
Salt	3	6
Upper Cumberland	8	24
Lower Cumberland	2	3
Tennessee	3	1
Mississippi	0	3
Ohio River minor tributaries	1	3

Figure 3-7. Probabilistic Monitoring Sites in the Licking River Basin

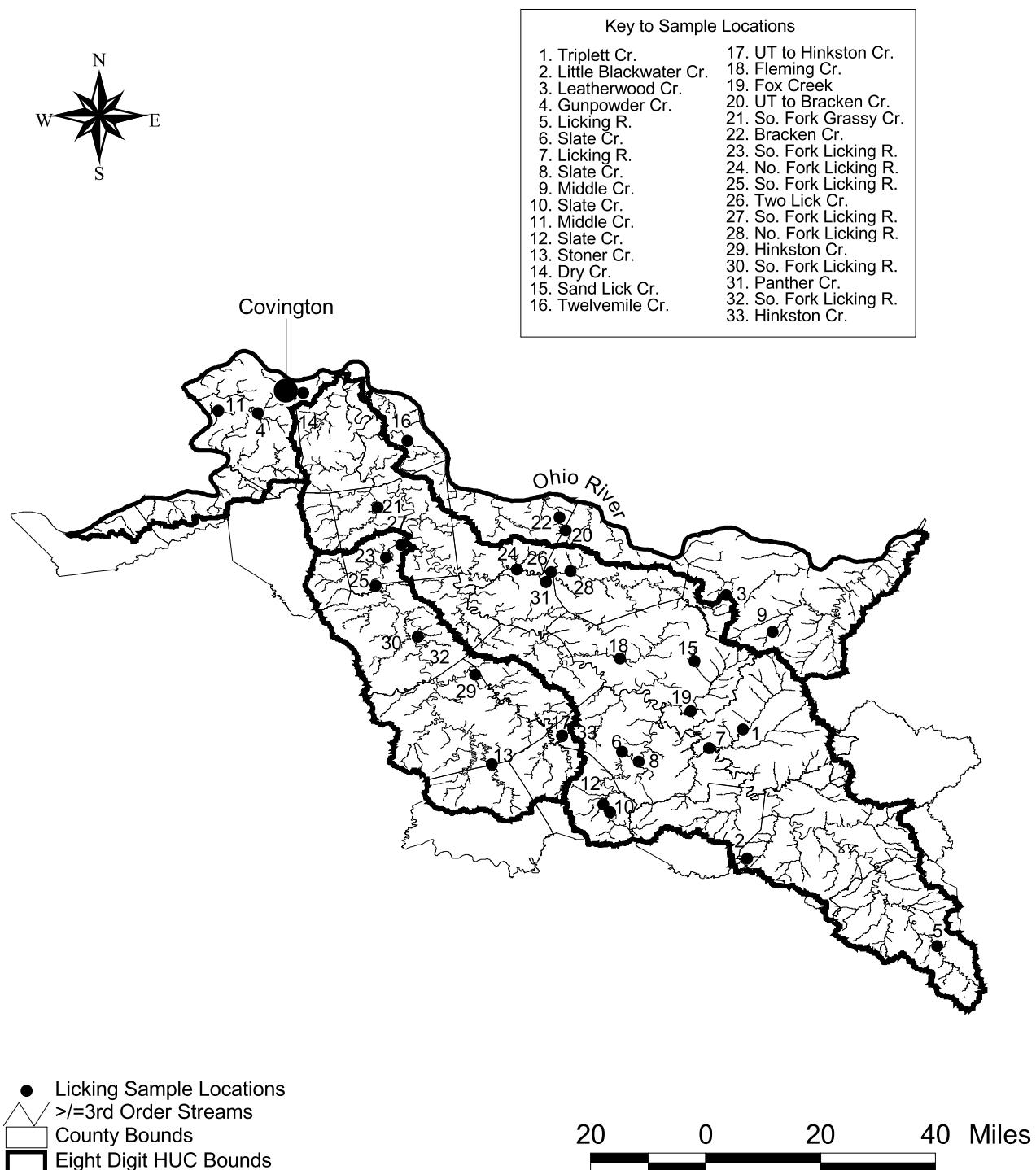


Figure 3-8. Probabilistic Monitoring Sites in the Salt River Basin

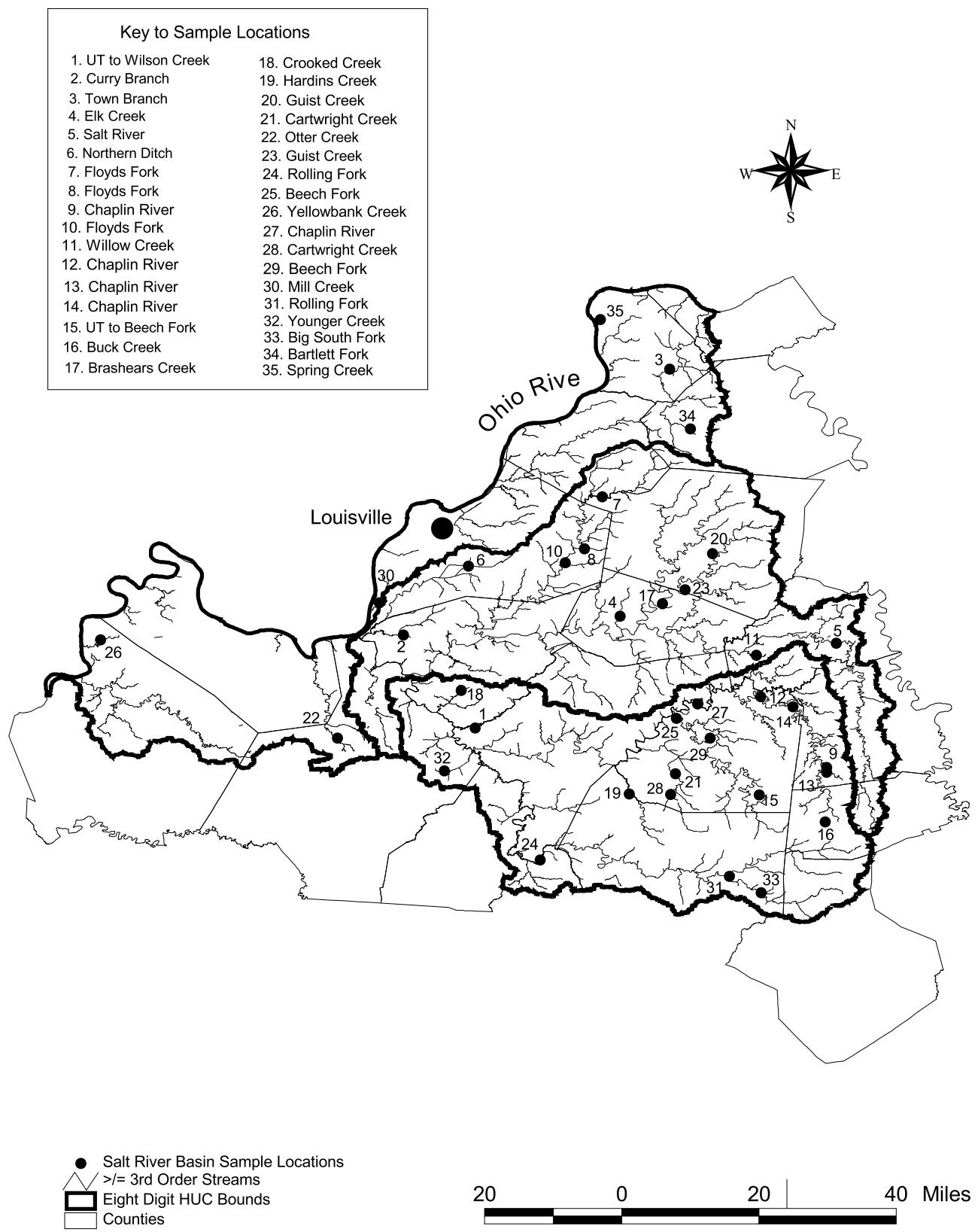


Figure 3-9. Probabilistic Monitoring Sites in the Upper Cumberland River Basin

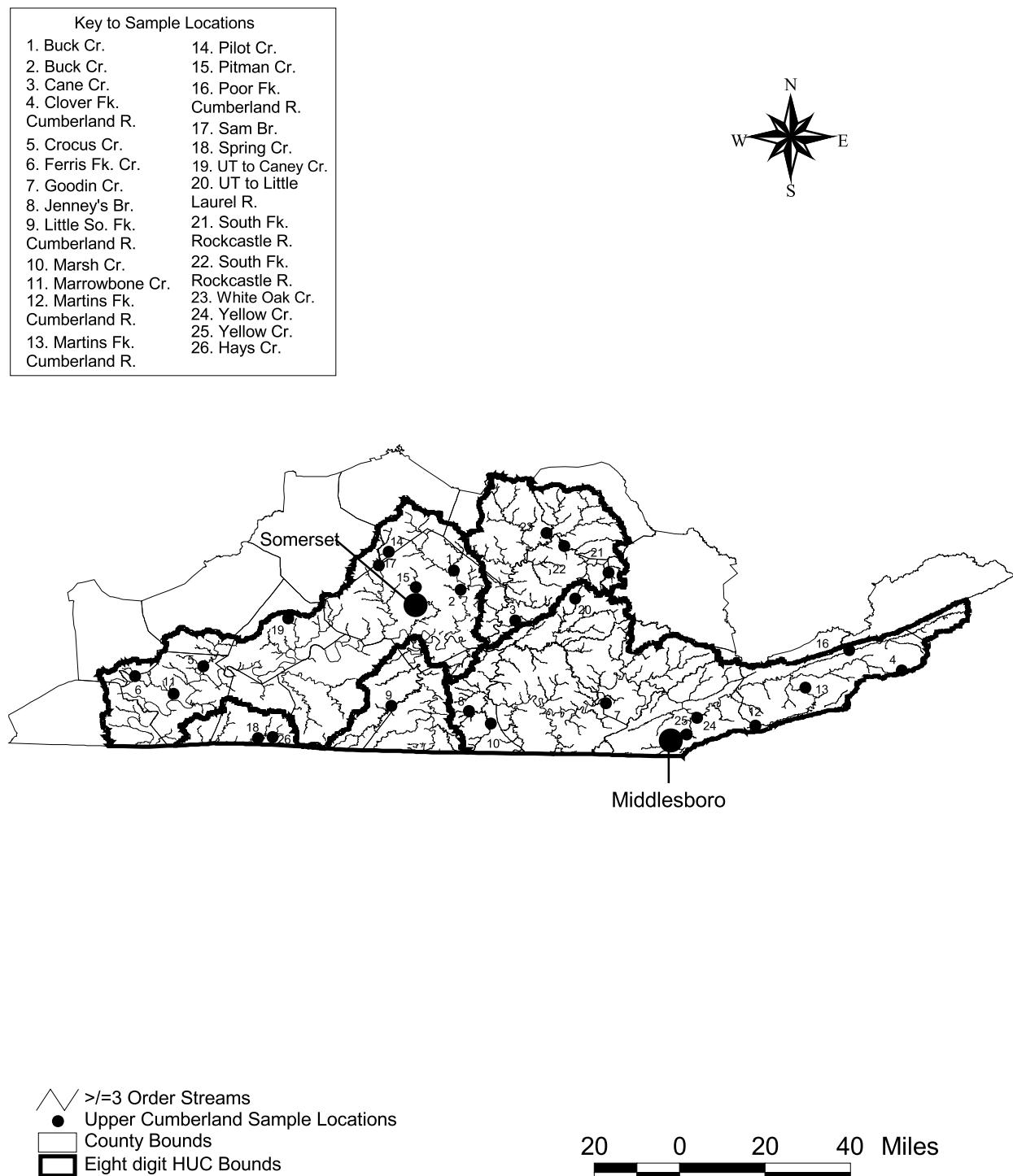


Figure 3-10. Probabilistic Monitoring Sites in the Lower Cumberland, Mississippi, Ohio and Tennessee Rivers Basins



Key to Sample Locations		
1. Dry Fk. Cr.	12. West Fk.	20. UT to Mayfield Cr.
2. Humphrey Cr.	Clark's R.	21. UT to Mayfield Cr.
3. Massac Cr.	13. Gilbert Cr.	22. UT to Obion Cr.
4. Clark's R.	14. Little Bayou deChien	23. Spring Cr.
5. Clark's R.	15. Little Bayou deChien	24. Clay Lick
6. Knob Cr.	16. Mayfield Cr.	25. Little R.
7. Clear Cr.	17. Mayfield Cr.	26. Little R.
8. Cypress Cr.	18. Mayfield Cr.	27. Little R.
9. Middle Fk.	19. Obion Cr.	28. Long Pond Br.
Clark's R.		29. No. Fk. Little R.
10. Reeves Br.		30. Sinking Fk.
11. UT to Old Beaver Dam Slough		31. Sugar Cr.

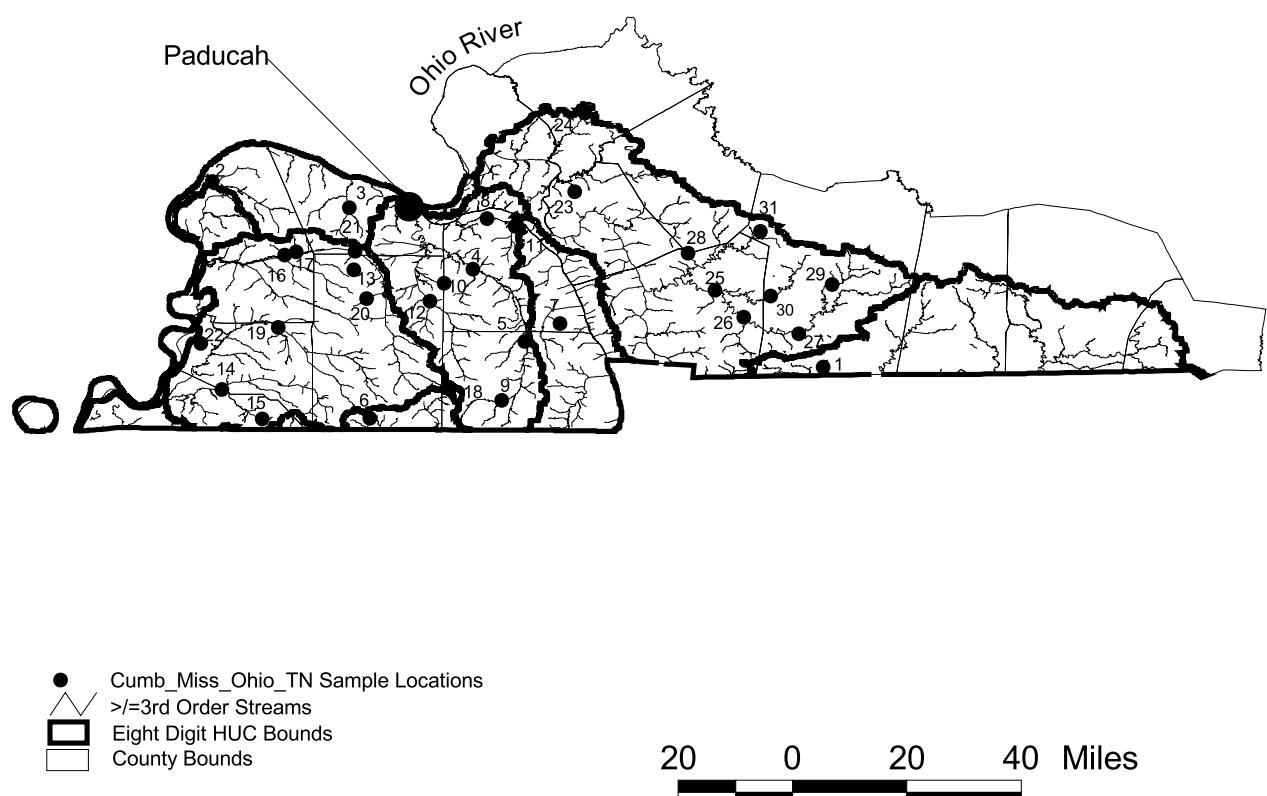


Table 3-3. Reference Reach Streams^a

<u>Stream</u>	<u>County</u>	<u>Location</u>	<u>Basin</u>	<u>Start Segment</u>	<u>End Segment</u>	<u>Total Miles</u>
Cane Creek	Whitley	0.1 mi below Daylight Branch	Upper Cumberland	11.5	7	4.5
Bark Camp Creek	Whitley	U.S. Forest Service Rd 193 bridge	Upper Cumberland	7.6	2.6	5
Eagle Creek	McCreary	KY 896 bridge	Upper Cumberland	6.3	3	3.3
South Fork Dog Slaughter Creek	Whitley	1000 ft above foot bridge (Dog Slaughter Falls Trail)	Upper Cumberland	4.6	0	4.6
Buck Creek	Pulaski	Off Bud Rainey Rd	Upper Cumberland	62.6	28.9	33.7
Marsh Creek	McCreary	KY 478 bridge	Upper Cumberland	26.2	12.6	13.6
Horse Lick Creek	Jackson	Horse Lick Creek Rd at first ford	Upper Cumberland	21.2	1.9	19.3
Bad Branch	Letcher	0.2 mi above KY 932 bridge	Upper Cumberland	3	0	3
Beaverdam Creek	Edmonson	KY 101-259 bridge	Green	14	7.6	6.4
Gasper River	Logan	0.2 mi above Bucksville Rd bridge	Green	38	32.3	5.7
Trammel Fork	Allen	0.1 mi below Red Hill Rd bridge	Green	30.15	19.4	10.75
Lick Creek	Simpson	0.1 mi above HWY 585 (265) bridge	Green	9.9	5.3	4.6
Peter Creek	Barren	HWY 3179; Oil Well Rd	Green	18.05	13.05	5
Caney Fork	Barren	0.1 mi below Hwy 3179 (Oil Well Rd)	Green	6.6	0.8	5.8
Falling Timber Creek	Metcalfe	Hwy 640 bridge crossing	Green	16	11.5	4.5
Russell Creek	Adair	0.15 mi below KY Hwy 80 at Gentry's Mill	Green	68	23.8	44.2
Goose Creek	Casey	Off Brock Rd	Green	14.6	5.6	9
Drennon Creek	Henry	Flat Bottom Rd crossing	Kentucky	11.9	10.5	1.4
Indian Creek	Carroll	Hwy 36 bridge	Kentucky	4.7	0.55	4.15
Musselman Creek	Grant	Lawrenceville – Keefer Rd bridge	Kentucky	8.4	2.6	5.8
Clear Creek	Woodford	Hifner Rd bridge, 2.1 mi S of Mortonsville	Kentucky	19	4.1	14.9
Station Camp Creek	Estill	Off KY Hwy 1209 at Estill-Jackson County boundary	Kentucky	22.3	19	3.3
South Fork Station Camp Creek	Jackson	KY 89 bridge	Kentucky	48.6	5.3	43.3
Sturgeon Creek	Lee	Off Sturgeon Creek Rd	Kentucky	31.1	4	27.3
Gladie Creek	Menifee	0.2 mi upstream of bridge	Kentucky	8.4	0	8.4
East Fork Indian Creek	Menifee	1 mi upstream of West Fork Indian Cr	Kentucky	8.5	0	8.5
Wolfpen Branch	Menifee	at KY 715 bridge	Kentucky	3.3	0	3.3
Right Fork Buffalo Creek	Owsley	Off Whoopflarea Rd	Kentucky	11.2	0	11.2
Buffalo Creek	Owsley	Side road along mainsteam	Kentucky	12.8	0.8	12
Clemons Fork	Breathitt	Robinson Forest Rd	Kentucky	4.7	0	4.7
Coles Fork	Breathitt	in Robinson Forest	Kentucky	5.5	0	5.5
Sugar Creek	Leslie	Sugar Creek Rd	Kentucky	4.4	0.8	3.6

Table 3-3 (Cont)

<u>Stream</u>	<u>County</u>	<u>Location</u>	<u>Basin</u>	<u>Start Segment</u>	<u>End Segment</u>	<u>Total Miles</u>
Elisha Creek	Leslie	Elisha Creek Rd	Kentucky	3.3	0.95	2.35
Line Fork Creek	Letcher	off KY 160	Kentucky	27.5	17.3	10.2
North Fork Licking River	Morgan	0.1 mi below Bucket Branch	Licking	21.3	13	8.3
Bucket Branch	Morgan	Leisure – Paragon Rd bridge	Licking	1.9	0	1.9
Devils Fork	Morgan	KY 711 bridge	Licking	7.8	0	7.8
Big Sinking Creek	Carter	KY 986 bridge	Little Sandy	15.2	10.7	4.5
Arabs Fork	Elliott	KY 1620 bridge	Little Sandy	4.7	0	4.7
Big Caney Creek	Elliott	off KY 32, Binion Ford Rd	Little Sandy	15	2.2	12.8
Laurel Creek	Elliott	Carter School Rd bridge	Little Sandy	14.4	7.6	6.8
Yellowbank Creek	Breckinridge	Cart-Manning Crossing Rd Wildlife Management Area	Ohio	11.9	4.4	7.5
Soldier Creek	Marshall	HWY 58 bridge	Tennessee	5.3	2.6	2.7
Blood River	Calloway	Grubbs Lane bridge; 0.75 mi E of State Line Rd	Tennessee	15.65	15.1	0.55
Panther Creek	Calloway	KY 280 bridge	Tennessee	5.1	1.2	3.9
Tradewater River	Christian	J. T. Sparkman Rd; 0.7 mi from Mt. Zoar Rd	Tradewater	132.3	126	6.3
Sandlick Creek	Christian	Mt. Carmel-Camp Cr. Rd; 0.75 mi W of KY Hwy 109	Tradewater	9	3.5	5.5
Wilson Creek	Bullitt	Mt. Carmel Church Rd, first crossing	Salt	17	12.2	4.8
Salt Lick Creek	Marion	Off Salt Lick Rd	Salt	8.4	5.3	3.1
Otter Creek	Larue	0.1 mi below West Fork, Herbert-Howell Rd	Salt	2.7	1.75	0.95
West Fork Red River	Christian	Carter Rd bridge	Lower Cumberland	26.5	16.3	10.2
Whippoorwill Creek	Logan	KY Hwy 2375 bridge	Lower Cumberland	44.6	0	44.6

^aStreams in bold are within the Salt/Licking and Cumberland/Tennessee/Mississippi basin management units

In 1999-2000, the reference reach program sampled 20 streams in the Salt/Licking unit, 41 streams in the upper Cumberland unit, and 26 in the lower unit.

Federally Threatened and Endangered Species. Waters were reviewed to determine if federally threatened or endangered species populations have been extirpated or have significantly declined since November 1975. The latter date is important because a use is defined as an “existing use” in Kentucky water quality standards regulations if the use existed on that date, even if it has been lost or the current designated use is different.

3.1.3 Other Data Sources

Discharge Monitoring Reports. Discharge monitoring report (DMR) data, collected by Kentucky Pollutant Discharge Elimination System (KPDES) permit holders, were accessed through DOW's permit compliance system database. Depending on the relative sizes of the wastewater discharge and the receiving stream and the severity of the permit violations, it sometimes was possible to assess instream uses as threatened or impaired. Because instream data were usually not collected, stream assessments based only on DMR data are considered evaluated, not monitored.

Coal Mining Operations. Coal mining permits require instream monitoring when the mining activity has the potential to affect an Outstanding State Resource Water containing a federally listed threatened or endangered species. Biological and water quality monitoring extends from the pre-mining phase through bond release. These data are used to assess aquatic life use.

Effects of Effluent Toxicity on Aquatic Communities. Several streams were sampled in 1995 to test the hypothesis that failure of point source discharges to meet whole effluent toxicity permit limits results in instream biological impacts. Biological assemblages were sampled both up- and downstream of the point source discharges to determine differences in community metrics and use support.

3.2 Assessment Methodology

Overall use support was determined by following EPA (1997) guidelines that define fully supporting as fully supporting all uses for which data are available. If a segment supported one use but did not support another, it is listed as not supporting. For instance, if a segment supported Warm Water Aquatic Habitat (WAH) but not Primary Contact Recreation (PCR), it is listed as not supporting (or impaired). A segment is listed as partially supporting if any assessed use fell into that category even if another use was fully supported. Many waterbodies were assessed for only one use because data were not available to assess other uses.

3.2.1 Aquatic Life and Primary Contact Recreation Use Support

The water quality and biological data described in the preceding pages were used to assess use support in rivers and streams. Data were categorized as “monitored” or “evaluated.” Monitored data were derived from site-specific surveys and were generally no more than five years old. In some instances where conditions were believed to have remained mostly unchanged, monitored data collected prior to 1995 were still considered valid, and waters described by these data were categorized as monitored. Also, data from the random survey network were used. More than 11,000 wadeable stream miles represented by this sampling in 1999-2000 are considered monitored waters. Like the targeted stations, each random survey station also was used to assess a limited reach of stream around the sample point. There are few evaluated waters remaining in the assessment database. All efforts in the watershed initiative are to gather defensible, monitored data. However, there were some monitoring data more than five years old, strong anecdotal information, and extrapolation of discharge data that resulted in evaluated assessments.

The total number of assessed stream miles was determined by adding the miles represented by the random survey and the miles assessed by the targeted monitoring in streams greater than fifth order that were not covered by the random survey approach. In other words, miles assessed by targeted monitoring in wadeable (first to fifth-order) streams are included in miles assessed by the random survey. However, results are given separately for targeted, random, and total miles.

Biological data were generally the determinant factor for establishing aquatic life use support in waters with both biological and water quality data. This was especially true when comparisons of total recoverable metals data to chronic water quality criteria disagreed with biological assessments. The DOW made this decision in recognition of the natural ability of surface waters to sequester metals, rendering them less available to aquatic life by reducing the more toxic “dissolved” fraction.

Water Quality Data. Chemical data collected by the DOW, MSD, and others were assessed according to EPA guidance (U.S. EPA 1997). Water quality data were compared to criteria contained in Kentucky Water Quality Standards Regulations (401 KAR 5:031). The segment fully supported WAH use when criteria for dissolved oxygen, un-ionized ammonia,

temperature, and pH were not met in 10 percent or less of the samples collected (October 1997 through March 2001 for the ambient stations and 12 months for the rotating watershed stations). Partial support was indicated if any one criterion for these parameters was not met in 11-25 percent of the samples. A segment was not supporting if any one of these criteria was not met more than 25 percent of the time.

Data for mercury, cadmium, copper, iron, lead, and zinc were analyzed for violations of acute criteria listed in state water quality standards regulations using at least three years of data during the period October 1997 to September 2001. The segment fully supported WAH use if all criteria were met at stations with quarterly or less frequent sampling or if only one violation occurred at stations with monthly sampling. Partial support was indicated if any one criterion was not met more than once but in less than 10 percent of the samples. The segment was not supporting if criteria were exceeded in greater than 10 percent of the samples. The assessment criteria are closely linked to the way state and federal water quality criteria were developed. Aquatic life are considered to be protected if, on the average, the acute criteria are not exceeded more than once every three years.

Fecal coliform and pH data were used to indicate the degree of support for PCR (swimming) use. The use was fully supported if the fecal coliform bacteria criterion of 400 colonies per milliliter was not met in less than 20 percent of the samples, partially supported if the criterion was not met in 25-33 percent of the samples, and not supported if the criterion was not met in 33 percent or more of the samples. Streams with pH less than 6.0 or greater than 9.0 units in more than 10 percent of the samples were considered to not support swimming use.

Biological Data. Several community structure function metrics were analyzed for each assemblage (algae, macroinvertebrates, and fish) as described earlier in this chapter. As outlined in Table 3-4, the metric scores were used to determine biotic integrity and aquatic life use support for each stream reach monitored. Expectations for metric values are dependent on stream size, ecoregion, and habitat quality. Bioassessments integrate data from the biological community, habitat, physical environment, water quality, and professional judgment of aquatic biologists.

Biological data sometimes were judged to be indeterminate. This occurred on several occasions in the Salt/Licking unit in 1999 when only one assemblage (usually fish, the

assemblage probably most affected by the drought) was sampled during the extreme drought conditions of that year. On other occasions the data were considered inadequate or the results borderline, and it was felt that re-sampling would be more appropriate than making a use support decision with existing data. Stations with inconclusive data are labeled "Maybe" or "Re-sample" in Appendices 3-1 and 3-2. These streams will be sampled again in the next watershed cycle.

Table 3-4. Biological Criteria for Assessment of Warm Water Aquatic Habitat Use Support^a

<u>Assemblage</u>	<u>Fully Supporting</u>	<u>Partially Supporting</u>	<u>Not Supporting</u>
Algae	Diatom Bioassessment Index (DBI) Classification of excellent or good, biomass similar to reference/control or STORET mean.	DBI classification of fair, increased biomass (if nutrient enriched) of filamentous green algae.	DBI classification of poor, biomass very low (toxicity), or high (organic enrichment).
Macroinvertebrate	Macroinvertebrate Bioassessment Index (MBI) excellent or good, high EPT, sensitive species present.	MBI classification of fair, EPT lower than expected in relation to available habitat, reduction in RA of sensitive taxa. Some alterations of functional groups evident.	MBI classification of poor, EPT low, TNI of tolerant taxa very high. Most functional groups missing from community.
Fish	Index of Biotic Integrity (IBI) excellent or good, presence of rare, endangered or species of special concern.	IBI fair.	IBI poor, very poor, or no fish.

^a Acronyms used in this table are: EPT = Ephemeroptera, Plecoptera, Trichoptera; RA = Relative Abundance; TNI = Total Number of Individuals

Federally Threatened and Endangered Species. Waters with federally threatened or endangered species in November 1975 have an existing "use" of Outstanding State Resource Water, and the loss or significant decline of one of these populations constitutes a use impairment.

3.2.2 Fish Consumption Use Support

Fish consumption is a category that, in conjunction with aquatic life use, assesses attainment of the fishable goal of the Clean Water Act. Assessment of the fishable goal was

separated into these two categories in 1992 because a fish consumption advisory does not preclude attainment of the aquatic life use and vice versa. Separating fish consumption and aquatic life use support gives a clearer picture of actual water quality conditions.

Kentucky revised its methodology for issuing fish consumption advisories in 1998 to a risk-based approach patterned after the Great Lakes Initiative. The risk-based approach generally is more conservative than the Food and Drug Administration (FDA) action levels that were used previously. For example, the FDA action level for mercury is 1.0 ppm but the risk-based number for issuing an advisory is as low as 0.12 ppm.

As a result of this change in methodology, a statewide advisory was issued in April 2000 for children under six and women of childbearing age to not consume more than one meal a week of any fish from Kentucky waters because of mercury. However, EPA (2001a) issued a draft mercury water quality criterion expressed as a methylmercury concentration in fish tissue of 0.3 ppm. Therefore, for purposes of 305(b) reporting, waters were not considered impaired unless fish exhibited mercury tissue concentrations of at least 0.3 ppm. In other words, the fish tissue concentration triggering the statewide advisory (0.12 ppm) was considered more stringent than water quality standards, and according to the Consolidated Assessment and Listing Methodology draft guidance (EPA 2001b) states are advised to list these waters as threatened, not impaired.

Other than the statewide advisory for mercury explained above, the following criteria were used to assess support for the fish consumption use:

- Fully supporting - no fish advisories or bans in effect
- Partially supporting - “restricted consumption” fish advisory or ban in effect for general population or a subpopulation that potentially could be at a greater cancer risk (e.g. pregnant women, children). Restricted consumption is defined as limits on the number of meals consumed per unit time for one or more fish species
- Not supporting – “no consumption” fish advisory or ban in effect for general population or a subpopulation that potentially could be at greater risk, for one or more fish species, or a commercial fishing ban in effect

3.2.3 Drinking Water Use Support

Drinking water use support was determined in several ways. First, compliance with maximum contaminant levels (MCLs) in finished water was determined by the annual average of quarterly samples. Drinking water use assessments in reservoirs were supplemented by surveys of drinking water operators on any taste and odor problems and use of biocides. The routine application of a biocide or use of carbon filtration were reasons for assessing a water as not fully supporting the domestic water supply use. Instream water quality data generally were not available to assess drinking water use.

3.2.4 Causes and Sources

Causes and sources are categorized by codes given in national guidance. Causes for primary contact recreation, fish consumption, and water supply usually were easily identified. However, most waters not supporting aquatic life use were identified by biological monitoring, and causes were determined by the observations and judgment of the field biologists. All causes may not be evident in the field, and there may be other causes contributing to use impairment that are not listed. Sources of all types of use impairments are even more difficult to determine and should be considered as “probable” sources at the 305(b) stage. Sources are more fully identified once the impaired waters are 303(d)-listed, TMDL sampling is conducted, and a more comprehensive look is taken at activities and land uses within the watershed.

3.3 Use Support

3.3.1 Statewide

Targeted Monitoring. Statewide summary results from targeted monitoring (Table 3-5) now include three years of intensive watershed monitoring in the Kentucky, Salt/Licking, and Cumberland basin management units and mostly pre-1998 assessments from the Green/Tradewater and Big Sandy basin management units. Watershed monitoring for the latter two units will be reported in 2004. Full support of all uses was attained in 5,356 miles (55.8 percent), partial use impairment was found in 2,092 miles (21.8 percent), and uses were not supported in 2,149 miles (22.4 percent). As found in previous years, the highest percentage of use impairment was found for the primary contact recreation use (61.1 percent partial and non-

Table 3-5. Use Support Summary of Rivers and Streams (miles), Targeted Monitoring

	<u>Assessed</u>	<u>Fully Supporting</u>	<u>Fully Supporting But Threatened</u>	<u>Partially Supporting</u>	<u>Not Supporting</u>
Overall	9597.1	5167.6	188.4	2092.2	2148.9
Aquatic Life	8754.5	5989.5	244.3	1530.1	990.6
Fish Consumption	2369.9	1468.0	0.0	763.2	138.7
Primary Contact Recreation	2849.1	1036.2	71.6	479.7	1261.6
Domestic Water Supply	1610.1	1501.3	108.8	0.0	0.0

support). Aquatic life use was fully supported in 6,234 miles (71.2 percent) and partially or non-supporting in 2,521 miles (28.8 percent).

Fish consumption use was fully supported in 62 percent of the miles assessed. Besides the statewide fish consumption advisory for mercury, long-standing fish consumption advisories remain in effect in several rivers and streams throughout the state. PCBs in fish tissue affected 71.5 miles of Town Branch and Mud River in Logan, Butler, and Muhlenberg counties, 46.9 miles of West Fork Drakes Creek in Simpson and Warren counties, and 6.5 miles of Little Bayou Creek in McCracken County. Fish consumption advisories on the Ohio River are discussed in Section 3.3.3.

The leading causes of impairment were pathogens, siltation, priority organics (including PCBs), habitat alteration, nutrients, and organic enrichment (Table 3-6). Probable sources were most often identified as agriculture, waste disposal, urban runoff, and mining (Table 3-7).

Individual use support by major river basin is shown in Table 3-8. The percentages of miles fully supporting aquatic life and swimming uses for each basin are depicted in Figure 3-11. This analysis shows that the far western (Lower Cumberland, Tennessee, Mississippi river basins) and eastern (Big Sandy Basin) regions of the state have the lowest percentage of aquatic life use support. Primary contact recreation use support ranged between 54 and 65 percent in the Kentucky, Licking, and Salt river basins but was usually much lower in other basins. Preliminary indications are that the last two basin management units to be assessed using intensive watershed monitoring data (Green/Tradewater and Big Sandy/Little Sandy/Tygarts) will have a higher percentage of impaired waters than indicated by the pre-watershed monitoring data used for Table 3-8 and Figure 3-11.

Table 3-6. Causes of Impairment of Rivers and Streams

<u>Cause/Stressor Category</u>	<u>Miles Impacted</u>
Pathogens	1560.2
Siltation	1361.9
PCBs	781.0
Other habitat alterations	586.5
Organic enrichment/low DO	454.3
Nutrients	412.7
Metals	367.6
Cause Unknown	294.5
Flow alteration	235.1
Dioxin	194.4
pH	192.1
Salinity/TDS/Chlorides	123.8
Turbidity	115.8
Suspended solids	58.0
Unionized Ammonia	34.2
Algal/Growth/Chlorophyll <i>a</i>	24.5
Unknown toxicity	19.4
Priority organics	18.0
Nonpriority organics	14.6
Radiation	13.0
Chlorine	12.2
Oil and grease	9.6
Exotic species	8.4
Thermal modifications	6.5
Pesticides	5.3
Noxious aquatic plants	3.9

Table 3-7. Probable Sources of Impairment of Rivers and Streams

<u>Source Category</u>	<u>Miles Impacted</u>
Source Unknown	1500.4
Agriculture	1286.5
Crop-related sources	319.6
Grazing-related sources	434.5
Intensive animal feeding operations	81.8
Resource Extraction	773.0
Surface Mining	183.7
Acid Mine Drainage	91.1
Abandoned Mining	83.3
Inactive Mining	79.6
Subsurface Mining	79.3
Petroleum Activities	35.8
Dredge Mining	18.4
Land Disposal	427.9
Onsite Wastewater System (Septic Tanks)	290.8
Inappropriate Waste Disposal/Wildcat Dumping	12.9
Septage Disposal	1.5
Habitat Modification (other than Hydromodification)	461.2
Removal of Riparian Vegetation	266.9
Bank or Shoreline Modification	135.8
Drainage/Filling of Wetlands	1.8
Municipal Point Sources	420.9
Package Plants (Small Flows)	98.7
Minor Municipal Point Sources	40.2
Major Municipal Point Sources	95.1
Urban Runoff/Storm Sewers	348.4
Erosion and Sedimentation	28.6
Highway/Road/Bridge/Runoff	18.8
Industrial Permitted	5.2
Non-Industrial permitted	4.3
Other Urban Runoff	3.1
Hydromodification	262.4
Channelization	156.3
Dredging	37.7
Upstream Impoundment	26.5
Flow Regulation/Modification	17.7
Dam Construction	3.2
Industrial Point Sources	189.3

Table 3-7 (Cont.) Probable Sources of Impairment of Rivers and Streams

<u>Source Category</u>	<u>Miles Impacted</u>
Construction	171.8
Land Development	86.2
Highway/Road/Bridge Construction	30.3
Silviculture	153.8
Harvesting, Restoration, Residue Mgmt	111.7
Logging Road Construction/Maintenance	10.5
Silvicultural Point Sources	3.5
Recreation and Tourism (other than boating)	8.1
Golf Courses	3.7
Collection System Failure	39.2
Natural Sources	49.8
Combined Sewer Overflow	17.3
Spills	3.6
Sources outside State Jurisdiction or Borders	3.6
Highway Maintenance and Runoff	1.9

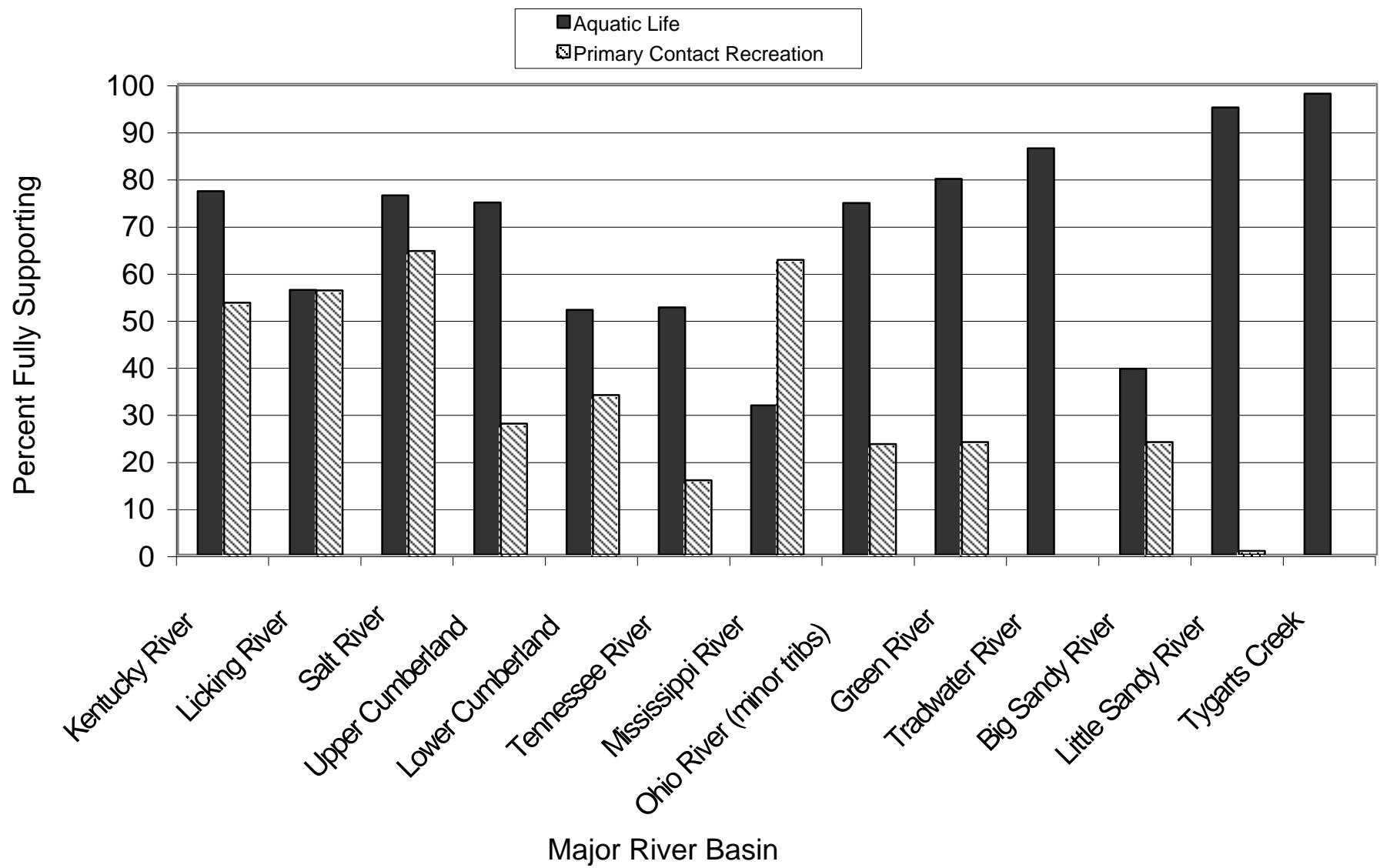
Table 3-8. Individual Use Support by Major River Basin (miles)

<u>Basin</u>	<u>Total</u>	<u>Assessed</u>	<u>Supporting</u>	<u>Threatened</u>	<u>Partially Supporting</u>	<u>Not Supporting</u>
Kentucky River						
Aquatic Life	1805.4	1277.6	46.9	371.7	109.2	
Fish Consumption	455.2	384.7	0.0	70.5	0.0	
Swimming	609.2	317.5	1.0	81.6	209.1	
Drinking Water	43.4	43.4	0.0	0.0	0.0	
Licking River						
Aquatic Life	562.1	288.7	26.8	139.8	106.8	
Fish Consumption	130.7	130.7	0.0	0.0	0.0	
Swimming	512.0	289.6	0.0	39.0	183.4	
Drinking Water	197.4	197.4	0.0	0.0	0.0	
Salt River						
Aquatic Life	576.6	401.8	39.6	74.9	60.3	
Fish Consumption	90.2	78.7	0.0	10.5	1.0	
Swimming	194.3	122.9	2.5	1.6	67.3	
Drinking Water	21.1	21.1	0.0	0.0	0.0	
Upper Cumberland						
River						
Aquatic Life	1275.8	904.4	57.3	156.9	157.2	
Fish Consumption	123.5	90.7	0.0	32.8	0.0	
Swimming	239.2	86.8	0.0	14.2	138.2	
Drinking Water	152.6	150.4	0.0	0.0	0.0	
Lower Cumberland						
River						
Aquatic Life	308.5	159.8	0.0	83.6	65.1	
Fish Consumption	18.2	8.7	0.0	9.5	0.0	
Swimming	137.0	46.4	0.0	27.4	63.2	
Drinking Water	38.1	38.1	0.0	0.0	0.0	
Tennessee River						
Aquatic Life	336.9	165.6	3.6	126.6	41.1	
Fish Consumption	17.5	11.5	0.0	6.0	0.0	
Swimming	121.5	17.8	0.0	38.8	64.9	
Drinking Water	5.1	5.1	0.0	0.0	0.0	
Mississippi River						
Aquatic Life	249.8	79.4	0.0	100.6	69.8	
Fish Consumption	17.2	17.2	0.0	0.0	0.0	
Swimming	40.7	25.5	0.0	11.8	3.4	
Drinking Water	0.0	0.0	0.0	0.0	0.0	
Ohio River (minor trib)						
Aquatic Life	583.0	420.7	14.6	61.3	86.4	
Fish Consumption	43.0	36.5	0.0	0.0	6.5	
Swimming	143.9	28.7	1.6	34.1	79.5	
Drinking Water	0.0	0.0	0.0	0.0	0.0	

Table 3-8. (Cont.)

<u>Basin</u>	Total <u>Assessed</u>	<u>Supporting</u>	<u>Threatened</u>	Partially <u>Supporting</u>	Not <u>Supporting</u>
<u>Green River</u>					
Aquatic Life	1392.6	1101.1	1.1	117.5	163.9
Fish Consumption	629.4	498.2	0.0	0.0	131.2
Swimming	358.2	85.6	0.0	39.4	233.2
Drinking Water	387.2	387.2	0.0	0.0	0.0
<u>Tradewater River</u>					
Aquatic Life	22.6	19.5	0.0	0.0	3.1
Fish Consumption	0.0	0.0	0.0	0.0	0.0
Swimming	3.1	0.0	0.0	0.0	3.1
Drinking Water	0.0	0.0	0.0	0.0	0.0
<u>Big Sandy River</u>					
Aquatic Life	666.1	208.8	54.4	288.9	114.0
Fish Consumption	108.7	108.7	0.0	0.0	0.0
Swimming	290.6	3.1	66.3	79.9	141.3
Drinking Water	107.8	89.8	18.0	0.0	0.0
<u>Little Sandy River</u>					
Aquatic Life	236.2	224.3	0.0	0.0	11.9
Fish Consumption	19.0	19.0	0.0	0.0	0.0
Swimming	26.2	0.0	0.2	26.0	0.0
Drinking Water	19.9	19.9	0.0	0.0	0.0
<u>Tygarts Creek</u>					
Aquatic Life	91.6	89.7	0.0	0.0	1.9
Fish Consumption	89.7	89.7	0.0	0.0	0.0
Swimming	46.5	0.0	0.0	45.7	0.8
Drinking Water	11.7	11.7	0.0	0.0	0.0

Figure 3-11. Aquatic Life and Primary Contact Recreation Use Support by Major River Basin



3.3.2 Salt/Licking and Cumberland Basin Management Units

Monitoring information is contained in Appendices 3-1 and 3-2. In the Licking River Basin, both swimming and aquatic life uses were fully supported in about 56 percent of the miles assessed for those uses (Table 3-8). Primary causes and sources of impairment are listed in Table 3-9. Use support was better in the Salt River Basin, with 77 percent fully supporting aquatic life use and 65 percent fully supporting swimming use. A high percentage of use support for aquatic life was found in the Upper Cumberland River Basin (75 percent) but support of swimming use was poor (36 percent) (Table 3-8). This is largely a result of poorly treated or untreated sanitary wastewater (Table 3-9). Use support of individual rivers and streams is depicted on Figure 3-14.

Aquatic life use support was not as good in the lower basin, with just over 50 percent of the miles having full support in the lower Cumberland and Tennessee and 32 percent in the Mississippi. Support of swimming use also was poor in this region (34 percent in the lower Cumberland and 15 percent in the Tennessee). Leading causes and sources of impairment are listed in Table 3-9. Use support of individual rivers and streams is depicted on Figure 3-15.

The probabilistic monitoring program assessed 5,628 miles for aquatic life use support in the Salt/Licking unit, with 61 percent of the miles fully supporting (Table 3-10). A total of 5,468 miles were assessed in the Cumberland unit. In the Upper Cumberland River Basin, only 49 percent of the miles fully supported the use. The lower portion of the Cumberland unit had an even lower percentage of aquatic life use support (29 percent).

Probabilistic and targeted monitoring results were fairly consistent in the Salt and Licking river basins but greatly different in the Cumberland basin management unit (Table 3-10). In the latter, the random survey approach yielded a much greater percentage of waters not fully supporting aquatic life use, probably because the random survey design includes many small (first and second-order) streams in western Kentucky that have been channelized and further impacted by agricultural practices. Except for the reference reach program, the targeted monitoring assessed mostly fourth and fifth-order streams.

Table 3-9. Leading Causes and Sources of Impairment in the Salt/Licking and Cumberland Basin Management Units

<u>Causes</u>	<u>Miles</u>	<u>Sources</u>	<u>Miles</u>
Salt River Basin			
Siltation	213.9	Agriculture	231.3
Nutrients	187.5	Municipal Point Sources	158.4
Organic enrichment/Low DO	149.6	Urban Runoff/Storm Sewers	145.8
Pathogens	138.4	Habitat Modification	90.0
Flow Alteration	35	Land Disposal	87.5
Licking River Basin			
Siltation	303.4	Agriculture	345.2
Pathogens	263.8	Source Unknown	122.7
Nutrients	218.2	Urban Runoff/Storm Sewers	78.2
Organic enrichment/Low DO	148.8	Silviculture	70.8
Other habitat alterations	57.3	Habitat Modification	66.6
Upper Cumberland River Basin			
Siltation	273.5	Resource Extraction	204.9
Pathogens	173.9	Agriculture	155.5
Other habitat alterations	141.6	Construction	86.8
pH	75.2	Habitat Modification	83.2
Organic enrichment/Low DO	52.3	Municipal Point Sources	78.3
Lower Cumberland/TN/MS River Basin			
Siltation	223.6	Source Unknown	268.6
Pathogens	182.2	Agriculture	202.5
Cause unknown	136.3	Hydromodification	130
Other habitat alterations	128	Habitat Modification	118.5
Flow alteration	89.3	Municipal Point Sources	51.4

Table 3-10. Comparison of Probabilistic and Targeted Survey Monitoring Results for Aquatic Life Use in the Salt/Licking and Cumberland/Tennessee/Mississippi Basin Management Units 1999-00, Miles (Percent)

<u>River Basin</u>	Full Support		Partial Support		Non-Support	
	<u>Prob</u>	<u>Target</u>	<u>Prob</u>	<u>Target</u>	<u>Prob</u>	<u>Target</u>
Salt	2229 (65.1)	441 (76.6)	537 (15.7)	75 (13.0)	657 (19.2)	60 (10.5)
Licking	1205 (54.7)	316 (56.1)	510 (23.1)	140 (24.9)	490 (22.2)	107 (19.0)
Subtotal	3434 (61.0)	757 (66.5)	1047 (18.6)	215 (18.9)	1147 (20.4)	167 (14.7)
Upper Cumberland	1297 (48.7)	962 (75.4)	905 (34.0)	157 (12.3)	463 (17.4)	157 (12.3)
Lower Cumberland/ Tennessee/Mississippi	260 (9.3)	408 (45.6)	362 (12.9)	311 (34.8)	2181 (77.8)	176 (19.7)
Subtotal	1557 (28.5)	1370 (63.1)	1267 (23.2)	468 (21.6)	2644 (48.4)	333 (15.3)
Total	4991 (45.0)	2127 (64.3)	2314 (20.9)	683 (20.6)	3791 (34.2)	500 (15.1)

Swimming advisories remain in effect on several streams in the upper Cumberland River Basin and lower Licking River Basin.

Upper Cumberland River Basin

- Cumberland River from Hwy 2014 to Pineville Hwy 66 and from Hwy 219 to Harlan
- Martins Fork from Harlan to Cawood Water Plant
- Catrons Creek
- Clover Fork
- Straight Creek
- Poor Fork from Harlan to Looney Creek
- Looney Creek from mouth to Lynch Water Plant bridge

Lower Licking River Basin

- Licking River from Banklick Creek to Ohio River
- Banklick Creek
- Threemile Creek

Fish consumption use was partially supported in 10.5 miles in the Salt River Basin, 32.8 miles in the Upper Cumberland River Basin, 9.5 miles in the lower Cumberland River Basin, and 6.0 miles in the Tennessee River Basin (Table 3-8) because of mercury. The major source of the mercury is generally thought to be air emissions from coal-fired boilers. Because of the interstate issues, EPA is conducting national studies and will likely be involved in eventual efforts to calculate TMDLs and reduce mercury inputs.

3.3.3 Ohio River

ORSANCO assessed uses in the 664 miles of the Ohio River main stem that forms Kentucky's northern boundary (ORSANCO 2002). Drinking water use was met for the entire river, and aquatic life use was fully supported except in 7.0 miles in Lewis County in northeastern Kentucky. However, no reaches of the Ohio River fully supported all uses. All of the miles partially supported the fish consumption use because of limited fish consumption advisories for PCBs. Mercury in fish tissue was greater than 0.3 ppm at a few locations and thus is another cause of partial support of fish consumption for 119 miles. Recent water sampling resulted in 307 miles also listed as partial support because of dioxin, all upstream of the Cannelton Lock and Dam in Hancock County. However, chlordane, which was previously listed as a pollutant of concern along with PCBs for the entire length of the river, was eliminated as a cause because tissue concentrations have gradually declined, and the new risk-based approach resulted in slightly less stringent numbers that trigger an advisory. Of the 118.9 miles assessed for swimming use, 40.2 miles partially supported and 78.7 miles did not support, often because of combined sewer overflows during and immediately following rainfall events in and downstream of urban areas.

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**Appendix 3-1. Monitoring Information from the
Salt/Licking Basin Management Unit**

Monitoring Results
Salt/Licking Basin Management Unit

Stream	Hydro	County	Segment	Sample Type^a						Program^b	Date	Use Support^c			
	Unit			Milepoints	Fish	Macroinv	Algae	WQ	Fecal			WAH	PCR	FC	DWS
Ohio River Minor Tributaries															
Briery Branch	05090201	Lewis	0.0 - 2.3	x						KDFWR	Aug-99	maybe			
Brush Creek	05090201	Campbell	0.0 - 1.6	x				x		KDFWR; MSU	May-Oct-99	FS	NS		
Cabin Creek	05090201	Mason	3.6 - 11.3	x	x					KDOW	Feb-97	NS			
Crooked Creek	05090201	Lewis	0.0 - 5.6	x						KDFWR	Aug-99	FS			
Fourmile Creek	05090201	Campbell	0.0 - 3.0	x				x		KDFWR; MSU	May-Oct-99	FS	NS		
Fourmile Creek	05090201	Campbell	3.0 - 8.3					x		MSU	Jun-Oct-99		NS		
Fourmile Creek	05090201	Campbell	8.4 - 9.4			x				TMDL	Jun-99 - Mar-00	FS			
Goose Creek	05090201	Bracken	0.0 - 1.9	x						KDFWR	Sep-99	PS			
Indian Creek	05090201	Lewis	0.0 - 9.4	x						KDRWR	Aug-96	FS			
Kinniconick Creek	05090201	Lewis	5.1 - 24.5	x	x	x	x	x	x	KDDW	Jul-85 - Jul-99	FS	FS	FS	
Kinniconick Creek	05090201	Lewis	24.5 - 38.9	x	x	x				KDOW	May-92 - Jul-99	FS			
Lee Creek	05090201	Mason	0.0 - 2.0	x						KDFWR	Aug-99	maybe			
Locust Creek	05090201	Bracken	0.0 - 4.1	x				x		KDFWR; MSU	May-Oct-99	FS	NS		
Locust Creek	05090201	Bracken	4.1 - 12.2	x						KDFWR	Sep-99	NS			
Salt Lick Creek	05090201	Lewis	0.0 - 9.0	x						KDFWR	Aug-99	FS			
Snag Creek	05090201	Bracken	0.5 - 5.5					x		MSU	May-Oct-99		NS		
Straight Fork	05090201	Lewis	0.0 - 1.9	x						KDFWR	Aug-96	FS			
Twelvemile Creek	05090201	Campbell	3.5 - 9.0		x					Prob	Jul-99	FS			
Allen Fork	05090203	Boone	2.0 - 4.6		x					KDOW	1996-97	PS			
Big Bone Creek	05090203	Boone	4.1 - 4.9	x						KDFWR	Aug-99	PS			
Big Bone Creek	05090203	Boone	6.8 - 11.6	x	x					KDOW	Mar-95	FS			
Big South Fork	05090203	Boone	0.8 - 3.0			x				RR	Jul-99	FS			
Craigs Creek	05090203	Gallatin	2.9 - 6.7	x						KDFWR	Aug-99	maybe			
Dry Creek	05090203	Boone	0.2 - 7.0	x	x					KDFWR; Prob	Jun-Aug-99	PS			
Dry Creek	05090203	Gallatin	1.1 - 3.0	x						KDFWR	Aug-99	PS			
Elijahs Creek	05090203	Boone	0.0 - 5.2			x				KDOW: DMRs	1998-2000	NS			
Gunpowder Creek	05090203	Boone	0.0 - 15.0	x	x	x				KDOW; Prob	Apr-95; Jun-99	NS			
Gunpowder Creek	05090203	Boone	15.0 - 16.6	x	x	x				KDOW; KDFWR	Apr-95; Aug-99	NS			
Gunpowder Creek	05090203	Boone	18.9 - 21.6	x	x					KDOW	Apr-95	PS			
McCools Creek	05090203	Carroll	0.0 - 6.7	x						KDFWR	Aug-99	maybe			
McCoy's Fork	05090203	Boone	0.0 - 2.2	x						KDFWR	Aug-99	maybe			
Mudlick Creek	05090203	Boone	0.0 - 6.0	x					x	KDFWR	Aug-99	resample	FS		
Mudlick Creek	05090203	Boone	6.0 - 11.3	x						KDFWR	Aug-99	resample			
South Fork Gunpowder Creek	05090203	Boone	0.0 - 2.0	x						KDFWR	Aug-99	NS			
South Fork Gunpowder Creek	05090203	Boone	4.1 - 6.8				x			MSU	May - Oct-99		NS		
Stephens Creek	05090203	Gallatin	0.0 - 1.8	x						KDFWR	Aug-99	FS			
Woolper Creek	05090203	Boone	2.8 - 7.2	x			x	x		KDFWR; MSU	May-Oct-99	resample	NS	FS	
Woolper Creek	05090203	Boone	11.6 - 13.6		x			x		KDOW; MSU	May-Oct-99	NS	NS		

Monitoring Results
Salt/Licking Basin Management Unit

Stream	Hydro	County	Segment	Sample Type^a						Program^b	Date	Use Support^c				
				Unit	Milepoints	Fish	Macroinv	Algae	WQ	Fecal	Tissue	DW	WAH	PCR	FC	DWS
Licking River																
Allison Creek	05100101	Fleming	0.0 - 4.7		x			x				NPS	Jul-Oct-98	NS	NS	
Banklick Creek	05100101	Kenton	0.0 - 3.9	x	x	x		x				KDOW; SD#1	Jun-95 - Aug-99	PS	NS	
Banklick Creek	05100101	Kenton	3.9 - 8.2			x		x				SD#1; TMDL	1995-2000	NS	NS	
Banklick Creek	05100101	Kenton	8.2 - 19.0				x	x				TMDL	Apr-99 - Mar-00	NS	NS	
Beaver Creek	05100101	Menifee	10.0 - 14.4		x							USFS	Jun-99	PS		
Blackwater Creek	05100101	Morgan	1.0 - 8.3	x	x	x	x	x				RR; USFS; KDOW	Apr-99 - Mar-00	FS	FS	
Brushy Fork	05100101	Fleming	0.0 - 2.2	x								KDFWR	Aug-99	FS		
Brushy Fork	05100101	Menifee	0.5 - 3.8		x							USFS	Jun-99	FS		
Bucket Branch	05100101	Morgan	0.0 - 1.9	x	x	x						RR	May-99	FS		
Burnng Fork	05100101	Magoffin	0.0 - 2.9						x			MSU	May-Oct-99		NS	
Caney Creek	05100101	Morgan	0.0 - 4.2	x						x		KDFWR	Aug-99	PS		
Cassidy Creek	05100101	Fleming	0.0 - 3.9					x				NPS	May-98-Oct-98		NS	
Cassidy Creek	05100101	Nicholas	0.5 - 5.0	x								KDFWR	Aug-99	maybe		
Christy Creek	05100101	Rowan	0.0 - 4.3		x							USFS	Jun-99	PS		
Craintown Branch	05100101	Fleming	0.0 - 3.5		x			x				NPS	May-Jul-98	PS	PS	
Crane Creek	05100101	Fleming	0.0 - 3.1	x								KDFWR	Aug-99	maybe		
Craney Creek	05100101	Rowan	0.0 - 3.0		x							USFS	Jul-99	FS		
Craney Creek	05100101	Rowan	3.0 - 10.0	x	x							KDFWR; USFS	Jul-96 - Jul-99	FS		
Crooked Creek	05100101	Nicholas	0.0 - 9.1					x				MSU	May-Oct-99		NS	
Cruises Creek	05100101	Kenton	0.0 - 8.6	x				x				KSNPC; MSU	May-Oct-99	FS	FS	
Devils Fork	05100101	Morgan	0.0 - 3.6	x	x	x						RR	May-99	FS		
Doty Branch	05100101	Fleming	0.0 - 4.0		x			x				NPS	Jun-92	NS	NS	
Dry Creek	05100101	Rowan	0.0 - 0.5		x							USFS	Jun-99	PS		
Elk Fork	05100101	Morgan	0.0 - 4.9	x	x	x						KDOW	Jul-99	PS		
Elk Fork	05100101	Morgan	4.9 - 10.5	x								KDFWR	Aug-99	NS		
Elk Fork	05100101	Morgan	12.6 - 14.7	x								KDRWR	Aug-99	PS		
Flat Creek	05100101	Bath	0.0 - 0.9	x			x	x				KDFWR; KDOW; MSU	Apr-99 - Mar-00	FS	NS	
Fleming Creek	05100101	Fleming	9.5 - 12.6		x			x				NPS	Jul-Oct-98	PS	NS	
Fleming Creek	05100101	Fleming	12.6 - 15.9	x								Prob	Jul-99	PS		
Fleming Creek	05100101	Fleming	25.9 - 32.1				x					NPS	May- Oct-98		NS	
Fleming Creek	05100101	Fleming	32.8 - 39.2	x								NPS	Jul-98	NS		
Fox Creek	05100101	Fleming	0.0 - 8.8	x			x	x				KDFRW; MSU	May- Oct-99	PS	FS	FS
Fox Creek	05100101	Fleming	20.1 - 22.7	x								KDFWR	Aug-99	NS		
Grassy Creek	05100101	Pendleton	0.0 - 1.3					x				MSU	May-Oct-99		FS	
Hillsboro Branch	05100101	Fleming	0.0 - 4.7	x								KDFWR	Aug-99	maybe		
Johnson Creek	05100101	Magoffin	0.0 - 3.1	x			x	x				KDFWR; MSU; KDOW	Apr-99 - Mar-00	maybe	NS	
Johnson Creek	05100101	Robertson	0.0 - 3.3	x			x					KDFWR; MSU	May-Oct-99	maybe	NS	
Left Fork White Oak Creek	05100101	Morgan	0.0 - 1.8	x								KDFWR	Aug-99	PS		
Lick Creek	05100101	Magoffin	0.0 - 2.2	x								KDFWR	Aug-99	maybe		
Licking River	05100101	Campbell	0.0 - 4.6			x	x					KDOW; ORSANCO	Oct-97 - Mar-00	PS	PS	
Licking River	05100101	Campbell	4.6 - 14.5				x			x		MSU; DW	May-Oct-99		PS	FS
Licking River	05100101	Campbell	14.5 - 21.2				x					MSU	May- Oct-99		FS	

Monitoring Results
Salt/Licking Basin Management Unit

Stream	Hydro	County	Segment	Sample Type^a						Program^b	Date	Use Support^c			
	Unit		Milepoints	Fish	Macroinv	Algae	WQ	Fecal	Tissue			WAH	PCR	FC	DWS
Licking River (cont)															
Licking River	05100101	Pendleton	21.2 - 51.6	x	x	x	x	x	x	KDOW; KSNPC; DW	Apr-99 - Mar-00	FS	FS	FS	FS
Licking River	05100101	Pendleton	51.6 - 71.6						x	DW	1999-2001				FS
Licking River	05100101	Harrison	71.6 - 106.8	x	x	x	x	x	x	KDOW; DW	Oct-97 - Mar-00	FS	FS	FS	FS
Licking River	05100101	Fleming	106.8 - 127.0					x	x	MSU; DW	May-Oct-99		FS		FS
Licking River	05100101	Fleming	127.0 - 141.2						x	DW	1998-2001				FS
Licking River	05100101	Fleming	141.2 - 144.3					x		MSU	May-Oct-99				FS
Licking River	05100101	Bath	144.3 - 168.5	x						Prob	Jul-99	resample			
Licking River	05100101	Rowan	168.5 - 173.6						x	DW	1998 - 2001				FS
Licking River	05100101	Morgan	226.4 - 239.3	x	x	x	x	x	x	KDOW; DW	Oct-97 - Mar-00	FS	FS	FS	FS
Licking River	05100101	Magoffin	247.8 - 255.7	x						KDFWR	Sep-99	maybe			
Licking River	05100101	Magoffin	263.1 - 269.5	x						KDFWR	Sep-99	maybe			
Licking River	05100101	Magoffin	269.9 - 292.0		x					Prob; DW	Jul-99	resample			FS
Licking River	05100101	Magoffin	292.0 - 297.1	x						KDFWR	Aug-99	FS			
Little Flat Creek	05100101	Bath	0.0 - 2.3	x						KDFWR	Aug-99	FS			
Locust Creek	05100101	Fleming	0.0 - 5.7	x						KDFWR	Aug-99	FS			
Locust Creek	05100101	Fleming	5.7 - 11.7	x						KDFWR	Aug-99	PS			
Logan Run	05100101	Fleming	0.0 - 2.3	x				x		KDFWR; NPS	Jun-95 - Oct-98	NS	NS		
Middle Fork Licking River	05100101	Magoffin	0.0 - 2.5	x	x	x		x	x	KDOW; MSU	May-Oct-99	FS	NS	FS	
Mill Creek	05100101	Bath	0.0 - 2.6	x						KDFWR	Aug-99	FS			
Minor Creek	05100101	Morgan	0.0 - 6.4	x						KDFWR	Jul-96	FS			
North Fork	05100101	Morgan	9.9 - 14.2	x	x	x	x	x		RR; KDOW	Apr-92 - Mar-00	FS	FS		
North Fork Licking River	05100101	Bracken	2.2 - 18.1			x	x			KDOW	Oct-97 - Mar-00	FS	FS		
North Fork Licking River	05100101	Bracken	18.1 - 31.8	x			x			Prob; MSU	May-Oct-99	NS	NS		
North Fork Licking River	05100101	Mason	31.8 - 51.7	x			x			Prob; MSU	May-Oct-99	NS	NS		
North Fork Triplet Creek	05100101	Rowan	1.2 - 14.8		x					Prob	Jul-99	resample			
North Fork Triplet Creek	05100101	Rowan	14.9 - 15.9	x						USFS	Jun-99	FS			
Oakley Creek	05100101	Magoffin	0.0 - 0.9	x						KDFWR	Jul-99	maybe			
Passenger Branch	05100101	Rowan	0.0 - 1.8		x					USFS	Oct-93 - Sep-95	FS			
Phillips Creek	05100101	Campbell	0.0 - 5.3				x			MSU	May-Oct-99		NS		
Poplar Creek	05100101	Fleming	0.0 - 3.1			x				KDOW	May-Oct-98		NS		
Prickly Ash Creek	05100101	Bath	0.0 - 3.1	x						KDFWR	Aug-99	NS			
Puncheon Camp Creek	05100101	Magoffin	0.0 - 1.1				x			MSU	May-Oct-99		NS		
Raven Creek	05100101	Harrison	2.5 - 4.5	x						KDFWR	Jun-94	FS			
Rockhouse Creek	05100101	Morgan	0.0 - 4.6	x						KDFWR	Aug-99	maybe			
Rock Lick Creek	05100101	Fleming	0.0 - 0.8	x						KDFWR	Aug-99	maybe			
Salt Lick Creek	05100101	Bath	3.0 - 8.0		x					USFS	Jun-99	PS			
Sand Lick Creek	05100101	Fleming	0.0 - 5.8	x						KDFWR	Aug-99	FS			
Scrubgrass Creek	05100101	Nicholas	0.0 - 1.6	x						KDFWR	Aug-99	NS			
Slabcamp Creek	05100101	Rowan	0.0 - 3.4		x					USFS	Jun-93	FS			
Slate Creek	05100101	Bath	0.0 - 7.0				x			MSU	May-Oct-99		NS		
Slate Creek	05100101	Bath	7.0 - 13.4	x	x	x	x	x	x	KDOW	Apr-98 - Mar-00	FS	FS	FS	
Slate Creek	05100101	Bath	13.4 - 22.2	x					x	KDFWR; DW	Aug-99	FS			FS
Slate Creek	05100101	Montgomery	42.8 - 52.2					x		MSU	May-Oct-99		FS		

Monitoring Results
Salt/Licking Basin Management Unit

<u>Stream</u>	<u>Hydro</u>	<u>County</u>	<u>Segment</u>	<u>Sample Type^a</u>						<u>Program^b</u>	<u>Date</u>	<u>Use Support^c</u>				
	<u>Unit</u>		<u>Milepoints</u>	<u>Fish</u>	<u>Macroinv</u>	<u>Algae</u>	<u>WQ</u>	<u>Fecal</u>	<u>Tissue</u>	<u>DW</u>		<u>WAH</u>	<u>PCR</u>	<u>FC</u>	<u>DWS</u>	
Licking River (cont)																
Slate Creek	05100101	Menifee	52.2 - 56.6	x							KDFWR	Aug-99	resample			
Sleepy Run	05100101	Fleming	0.0 - 2.8				x				NPS	May-Oct-98		NS		
South Fork Grassy Creek	05100101	Pendleton	0.0 - 19.6	x	x	x	x	x			RR; KSNPC; KDOW	Apr-99 - Mar-00	FS	FS		
State Road Fork	05100101	Magoffin	0.0 - 1.1	x							KDFWR	Aug-99	maybe			
Stonecoal Branch	05100101	Rowan	0.0 - 2.5		x						USFS	Jul-96	FS			
Stony Creek	05100101	Nicholas	0.0 - 3.0	x							KDFWR	Sep-99	NS			
Straight Creek	05100101	Morgan	0.0 - 1.8	x							KDFWR	Aug-99	NS			
Threemile Creek	05100101	Campbell	0.5 - 4.7				x				MSU	May-Oct-99		NS		
Town Branch	05100101	Fleming	0.0 - 4.0				x				NPS	May-Oct-99		NS		
Trace Fork	05100101	Magoffin	0.0 - 3.1	x							KDFWR	Jul-99	PS			
Triplett Creek	05100101	Rowan	5.8 - 12.0	x	x	x	x	x			KDOW	Apr-99 - Mar-00	PS	NS		
Triplett Creek	05100101	Rowan	12.0 - 15.7						x		DW	1998-2001			FS	
Triplett Creek	05100101	Rowan	15.7 - 20.5		x						USFS	Jun-99	FS			
West Creek	05100101	Robertson	0.0 - 9.5	x	x	x					RR	May-Jun-99	FS			
Williams Creek	05100101	Morgan	0.0 - 5.3	x				x			KDFWR; MSU	May-Oct-99	resample	NS		
Willow Creek	05100101	Pendleton	0.0 - 10.2	x	x	x					RR	Jun-93 - Jun-99	FS			
Wilson Run	05100101	Fleming	0.0 - 5.1					x			NPS	May-Oct-98		NS		
South Fork Licking River																
Blacks Creek	05100102	Bourbon	0.0 - 3.4	x							KDFWR	Aug-99	PS			
Boone Creek	05100102	Bourbon	0.0 - 5.0	x							KDFWR	Aug-99	PS			
Cooper Run	05100102	Bourbon	0.0 - 10.1	x							KDFWR	Aug-99	NS			
Flat Run	05100102	Bourbon	0.0 - 2.2	x							KDFWR	Aug-99	NS			
Grassy Lick Creek	05100102	Montgomery	0.0 - 4.5	x							KDFWR	Aug-99	PS			
Hinkston Creek	05100102	Bourbon	0.0 - 12.4	x	x	x	x	x			KDOW; Prob	Apr-98 - Mar-00	PS	FS	FS	
Hinkston Creek	05100102	Bourbon	13.0 - 16.4						x		DW	1998-2001			FS	
Hinkston Creek	05100102	Bourbon	20.8 - 31.0	x				x			KDFWR; MSU	May-Oct-99	FS	PS		
Hinkston Creek	05100102	Bourbon	31.0 - 33.3	x							KDFWR	Aug-99	FS			
Hinkston Creek	05100102	Bourbon	41.8 - 49.1	x				x			KDFWR; MSU	May- Oct-99	PS	NS		
Hinkston Creek	05100102	Montgomery	51.5 - 65.9	x	x						KDOW; KDFWR	Oct-95; Aug-99	NS			
Hinkston Creek	05100102	Montgomery	68.0 - 70.8	x	x						KDOW	Oct-95	FS			
Houston Creek	05100102	Bourbon	0.0 - 9.0					x			MSU	May-Oct-99		NS		
Houston Creek	05100102	Bourbon	9.0 - 12.7	x							KDFWR	Aug-99	PS			
Hutchison Creek	05100102	Bourbon	0.0 - 5.4	x							KDFWR	Aug-99	maybe			
Little Stoner Creek	05100102	Clark	0.0 - 5.0					x			MSU	May- Oct-99		NS		
Mill Creek	05100102	Harrison	0.0 - 21.2				x	x			KDOW	Apr-99 - Mar-00	FS	FS		
Somerset Creek	05100102	Nicholas	0.0 - 4.4	x	x						KDOW; KDFWR	Oct-95; Aug-99	resample			
South Fork Licking River	05100102	Pendleton	2.0 - 6.8		x			x			Prob, MSU	May- Oct-99	FS	FS		
South Fork Licking River	05100102	Pendleton	6.8 - 11.3	x							Prob	Jul-99	FS			

Monitoring Results
Salt/Licking Basin Management Unit

Stream	Hydro	County	Segment	Sample Type^a						Program^b	Date	Use Support^c			
	Unit			Milepoints	Fish	Macroinv	Algae	WQ	Fecal			WAH	PCR	FC	DWS
South Fork Licking River (cont)															
South Fork Licking River	05100102	Pendleton	11.3 - 16.6			x	x			KDOW	Oct-97 - Mar-00	FS	FS		
South Fork Licking River	05100102	Harrison	16.6 - 27.2		x		x			Prob; MSU	May- Oct-99	FS	FS		
South Fork Licking River	05100102	Harrison	35.0 - 46.4		x		x			Prob; MSU	May- Oct-99	FS	FS		
South Fork Licking River	05100102	Harrison	50.4 - 59.8						x	DW	1998-2001				FS
Stoner Creek	05100102	Bourbon	0.0 - 5.5	x	x	x	x	x	x	KDOW; DW	Apr-98 - Mar-00	FS	FS	FS	FS
Stoner Creek	05100102	Clark	5.5 - 15.0				x			MSU	May-Oct-99		NS		
Stoner Creek	05100102	Bourbon	15.1 - 17.2						x	DW	1998-2001				FS
Stoner Creek	05100102	Bourbon	17.2 - 29.8				x			MSU	May-Oct-99		FS		
Stoner Creek	05100102	Bourbon	44.8 - 60.5				x			MSU	May- Oct-99		FS		
Stoner Creek	05100102	Bourbon	60.5 - 72.2	x						KDFWR	Aug-99	maybe			
Strodes Creek	05100102	Bourbon	2.7 - 19.3	x	x	x	x	x	x	KDOW; MSU	Apr-99 - Mar-00	PS	NS	FS	
Townsend Creek	05100102	Harrison	0.0 - 4.8				x			MSU	May-Oct-99		NS		
Ohio River Minor Tributaries															
Beargrass Creek	5140101	Jefferson	0.0 - 1.5			x				inferred from MSD data	Dec-97 - Oct-99	NS			
Corn Creek	05140101	Trimble	0.0 - 4.1	x						KDFWR	Aug-99	FS			
Goose Creek	05140101	Jefferson	0.5 - 3.2		x	x	x			MSD	Dec-97 - Oct-99	PS	PS		
Goose Creek	05140101	Jefferson	3.2 - 12.2			x	x			MSD	Dec-97 - Oct-99	PS	NS		
Hardy Creek	05140101	Trimble	0.0 - 1.4	x						KDFWR	Aug-99	NS			
Harrods Creek	05140101	Jefferson	3.2 - 6.1			x	x			MSD	Dec-97 - Oct-99	FS	FS		
Harrods Creek	05140101	Oldham	6.1 - 9.1			x	x			KDOW	Apr-99 - Mar-00	FS	FS		
Hite Creek	05140101	Jefferson	0.0 - 5.5	x	x					KDOW	Sep-95	NS			
Little Goose Creek	05140101	Jefferson	0.0 - 8.7			x	x			MSD	Dec-97 - Oct-99	FS	PS		
Little Kentucky River	05140101	Carroll	3.0 - 12.3	x	x	x				KDOW	Jun-95	FS			
Little Kentucky River	05140101	Henry	21.0 - 27.0	x						KDFWR	Aug-99	PS			
Locust Creek	05140101	Carroll	0.0 - 2.0	x						KDFWR	Aug-99	FS			
Middle Fork Beargrass Creek	05140101	Jefferson	0.0 - 2.3	x	x		x			MSD	Dec-97 - Oct-99	NS	NS		
Middle Fork Beargrass Creek	05140101	Jefferson	2.3 - 2.9			x	x			MSD	Dec-97 - Oct-99	FS	NS		
Middle Fork Beargrass Creek	05140101	Jefferson	2.9 - 6.3			x	x			MSD	Dec-97 - Oct-99	FS	NS		
Mill Creek	05140101	Jefferson	1.1 - 4.7			x	x			MSD	Dec-97 - Oct-99	NS	NS		
Mill Creek Cutoff	05140101	Jefferson	0.0 - 2.3			x	x			MSD	Dec-97 - Oct-99	FS	NS		
Muddy Fork Beargrass Creek	05140101	Jefferson	0.0 - 6.9			x	x			MSD	Dec-97 - Oct-99	FS	NS		
Pond Creek	05140101	Oldham	0.0 - 1.5	x	x					KDOW	May-94	PS			
South Fork Beargrass Creek	05140101	Jefferson	0.0 - 2.7			x	x			MSD	Dec-97 - Oct-99	resample	NS		
South Fork Beargrass Creek	05140101	Jefferson	4.7 - 6.5			x	x			MSD	Dec-97 - Oct-99	FS	NS		
UT to Carmon Creek	05140101	Trimble	0.9 - 1.9			x				DMRs	Oct-97 - Sep-99	NS			
UT to Pond Creek	05140101	Oldham	0.0 - 0.5	x	x	x				KDOW; DMRs	Jun-94 - Sep-99	NS			
UT to Pond Creek	05140101	Oldham	0.5 - 0.9	x	x					KDOW	Jun-94 - Jun-95	FS			
White Sulphur Creek	05140101	Henry	0.0 - 3.9	x						KDFWR	Aug-99	maybe			

Monitoring Results
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Stream	Hydro	County	Segment	Sample Type^a						Program^b	Date	Use Support^c				
				Unit	Milepoints	Fish	Macroinv	Algae	WQ	Fecal	Tissue	DW	WAH	PCR	FC	DWS
Salt River																
Brashears Creek	05140102	Spencer	0.0 - 13.0		x			x	x			KDOW; Prob	Apr-98 - Mar-00	FS	FS	
Brashears Creek	05140102	Spencer	13.0 - 25.5	x	x	x						KDOW	Jun-Jul-99	FS		
Brooks Run	05140102	Bullitt	0.0 - 2.5						x			TMDL	Aug-99		FS	
Brooks Run	05140102	Bullitt	2.5 - 4.1		x				x			TMDL	Aug-99	PS	PS	
Brooks Run	05140102	Bullitt	4.1 - 6.1		x				x			TMDL	Aug-99	PS	NS	
Bullitt Lick Creek	05140102	Bullitt	0.0 - 2.3	x								KDFWR	Sep-99	PS		
Bullskin Creek	05140102	Shelby	0.0 - 10.3	x				x	x			KDFWR; KDOW	Apr-99 - Mar-00	maybe	FS	
Cane Run	05140102	Jefferson	0.0 - 7.6	x	x							KDOW	Oct-96	FS		
Cedar Creek	05140102	Bullitt	0.0 - 5.1	x	x	x						RR	Jul-99	FS		
Cedar Creek	05140102	Jefferson	4.2 - 11.1					x	x			MSD	Dec-97 - Oct-99	FS	FS	
Chenoweth Run	05140102	Jefferson	1.8 - 5.2		x			x	x			MSD	Dec-97 - Oct-99	PS	NS	
Clear Creek	05140102	Shelby	0.0 - 11.0	x			x	x				KDFWR; KDOW	Apr-99 - Mar-00	NS	FS	
Cox Creek	05140102	Nelson	11.2 - 15.5	x								KDFWR	Sep-99	PS		
Crooked Creek	05140102	Spencer	1.0 - 10.1	x	x	x						RR	Jun-99	FS		
Currys Fork	05140102	Oldham	0.0 - 4.8	x	x	x	x	x				KDOW	Apr-99 - Mar-00	PS	NS	
East Fork Cox Creek	05140102	Bullitt	0.0 - 4.3	x								KDFWR	Sep-99	FS		
Fern Creek/Northern Ditch	05140102	Jefferson	0.0 - 7.5				x	x				MSD	Jan-94 - Dec-96	PS	NS	
Fern Creek/Northern Ditch	05140102	Jefferson	7.5 - 10.3				x	x				MSD	Dec-97 - Oct-99	resample	NS	
Fern Creek	05140102	Jefferson	10.5 - 11.9				x	x				MSD	Dec-97 - Oct-99	PS	NS	
Fishpool Creek	05140102	Jefferson	0.0 - 1.9				x	x				MSD	Jan-94 - Dec-96	FS	FS	
Floyds Fork	05140102	Bullitt	3.7 - 7.5	x	x	x	x	x	x			KDOW	Apr-98 - Mar-00	FS	FS	FS
Floyds Fork	05140102	Jefferson	11.6 - 21.6		x		x	x				MSD	Dec-97 - Oct-99	NS	NS	
Floyds Fork	05140102	Jefferson	24.2 - 31.2	x								Prob	Jun-99	PS		
Floyds Fork	05140102	Jefferson	31.3 - 34.1		x		x	x				Prob; MSD	Dec-97 - Oct-99	PS	NS	
Guist Creek	05140102	Shelby	0.0 - 15.4	x	x	x						KDOW; Prob	Jun-Jul-99	FS		
Guist Creek	05140102	Shelby	15.4 - 27.6	x	x				x			KDFWR; Prob	Jun-Jul-99	PS	FS	
Hammond Creek	05140102	Anderson	0.0 - 5.2	x					x			KDFWR	Jul-99	maybe	FS	
Ieptha Creek	05140102	Shelby	0.0 - 0.7	x								KDFWR	Jul-99	NS		
Long Lick Creek	05140102	Bullitt	0.0 - 10.5	x								KDFWR	Sep-99	NS		
Long Run	05140102	Jefferson	0.0 - 3.0				x	x				MSD	Dec-97 - Oct-99	FS	NS	
Mill Creek	05140102	Hardin	6.0 - 7.0				x					DMRs	Mar-98 - Nov-00		NS	
Mill Creek	05140102	Hardin	7.0 - 11.8	x								KDFWR	Sep-99	FS		
Mill Creek	05140102	Hardin	11.8 - 23.6	x	x							KDOW	Nov-93	FS		
Mill Creek Branch	05140102	Hardin	0.0 - 0.7	x	x							KDOW	Nov-93	PS		
Pennsylvania Run	05140102	Jefferson	0.0 - 3.1				x	x				MSD	Dec-97 - Oct-99	PS	NS	
Pond Creek	05140102	Jefferson	5.1 - 8.1				x	x				MSD	Dec-97 - Oct-99	NS	NS	
Pond Creek	05140102	Jefferson	14.7 - 16.1				x	x				MSD	Dec-97 - Oct-99	FS	NS	
Pope Lick Creek	05140102	Jefferson	2.0 - 5.2				x	x				MSD	Dec-97 - Oct-99	FS	NS	
Salt River	05140102	Bullitt	11.5 - 25.5	x	x	x	x	x	x			KDOW	Oct-97 - Mar-00	FS	FS	FS
Salt River	05140102	Spencer	49.7 - 55.4	x								KDFWR	Jun-99	FS		

Monitoring Results
Salt/Licking Basin Management Unit

Stream	Hydro	County	Segment	Sample Type^a						Program^b	Date	Use Support^c				
				Unit		Milepoints	Fish	Macroinv	Algae	WQ	Fecal	Tissue	DW	WAH	PCR	FC
Salt River (Cont.)																
Salt River	05140102	Spencer	55.4 - 55.9	x	x	x				x		KDOW	Jun-99	FS		FS
Salt River	05140102	Spencer	55.9 - 60.0							x		DW	1999-2001			FS
Salt River	05140102	Anderson	78.0 - 88.5	x	x	x	x	x	x	x		KDOW	Oct-97 - Mar-00	FS	FS	PS
Salt River	05140102	Anderson	88.5 - 111.2	x	x	x						KDOW; Prob	Jul-97; Jun-99	FS		
Simpson Creek	05140102	Spencer	0.0 - 6.8	x			x	x				KDFWR; KDOW	Apr-99 - Mar-00	resample	FS	
Slop Ditch	05140102	Jefferson	0.0 - 1.9				x	x				MSD	Apr-94 - Jul-96	PS	NS	
Southern Ditch of Pond Creek	05140102	Jefferson	1.9 - 3.8				x	x				MSD	Dec-97 - Oct-99	FS	NS	
Spring Ditch (of Northn Ditch)	05140102	Jefferson	0.0 - 2.7				x	x				MSD	Dec-97 - Oct-99	NS	NS	
Rolling Fork																
Beaver Creek	05140103	Anderson	0.0 - 20.9	x	x	x						RR	May-99	FS		
Beech Fork	05140103	Nelson	1.9 - 18.7	x								KSNPC	Jul-99	FS		
Beech Fork	05140103	Nelson	39.5 - 49.8	x	x	x	x	x	x	x		KDOW	Oct-97 - Mar-00	FS	FS	FS
Beech Fork	05140103	Washington	49.7 - 56.5	x								Prob	Jun-99	FS		
Beech Fork	05140103	Washington	56.5 - 85.3?	x								Prob	Jun-99	FS		
Big South Fork	05140103	Marion	0.0 - 12.4				x	x				KDOW	Apr-99 - Mar-00	FS	NS	
Cartwright Creek	05140103	Washington	0.0 - 6.6	x	x	x			x			KDOW	Aug-99	PS		FS
Cartwright Creek	05140103	Washington	6.6 - 12.6	x	x							EKU	Jun-99	PS		
Chaplin River	05140103	Nelson	0.0 - 22.7	x	x		x	x	x			KSNPC; KDOW; Prob	Apr-99 - Mar-00	FS	FS	FS
Chaplin River	05140103	Washington	32.2	x								Prob	Jun-99	FS		
Chaplin River	05140103	Washington	40.1 - 53.7	x	x	x						RR; Prob	Jul-Aug-99	FS		
Chaplin River	05140103	Mercer	63.0 - 69.7	x	x							EKU	Jun-99	NS		
Chaplin River	05140103	Mercer	69.7 - 78.0	x								Prob	Jun-99	FS		
Chenoweth Run	05140103	Jefferson	1.8 - 5.2	x		x	x					MSD	Dec-97 - Oct-99	FS	NS	
Clear Creek	05140103	Hardin	0.0 - 4.4	x	x							EKU	Jun-99	NS		
Crooked Creek	05140103	Bullitt	5.6 - 12.8		x							Prob	Jun-99	NS		
East Fork Beech Fork	05140103	Washington	0.0 - 1.8	x	x							EKU	Jun-99	NS		
Hardins Creek	05140103	Washington	0.0 - 7.0	x								KSNPC	Jul-99	FS		
Harts Run	05140103	Bullitt	0.0 - 1.1	x	x	x						RR	May-99	FS		
Jones Creek	05140103	Marion	0.0 - 3.9	x	x							EKU	Jun-99	PS		
Middle Fork Otter Creek	05140103	Larue	0.0 - 4.2	x	x							EKU	Jun-99	FS		
Mussin Branch	05140103	Marion	0.0 - 1.7			x						KDOW	Jun-95	NS		
North Rolling Fork	05140103	Marion	0.0 - 3.7	x	x							EKU	Jun-99	FS		
North Rolling Fork	05140103	Boyle	16.7 - 20.9	x	x							EKU	Jun-99	FS		
Otter Creek	05140103	Larue	0.0 - 2.7	x	x	x						RR	Oct-96 - Jun-99	FS		
Overalls Creek	05140103	Bullitt	0.0 - 1.3	x	x							RR	May-99	FS		
Pope Creek	05140103	Marion	0.0 - 2.1	x								RR	May-01	FS		
Pottinger Creek	05140103	Nelson	0.0 - 5.0	x								KSNPC	Jul-99	FS		
Prather Creek	05140103	Marion	0.0 - 3.1	x	x							EKU	Jun-99	FS		
Road Run	05140103	Washington	0.0 - 3.4	x	x							EKU	Jun-99	PS		
Rolling Fork	05140103	Bullitt	10.0 - 15.0			x	x					KDOW	Oct-97 - Mar-00	FS	FS	
Rolling Fork	05140103	Nelson	38.4 - 41.8	x	x	x			x			KDOW	Jun-87-Aug-99	FS		FS
Rolling Fork	05140103	Nelson	41.8 - 62.5	x	x							EKU	Jun-99	FS		

Monitoring Results
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Stream	Hydro	County	Segment	Sample Type^a						Program^b	Date	Use Support^c			
	Unit			Milepoints	Fish	Macroinv	Algae	WQ	Fecal			WAH	PCR	FC	DWS
Rolling Fork (Cont)															
Rolling Fork	05140103	Nelson	62.5 - 76.3	x						Prob	Jun-99	FS			
Rolling Fork	05140103	Marion	76.3 - 93.7	x						KSNPC	Jul-99	FS			
Rolling Fork	05140103	Marion	93.7 - 100.2						x	DW	1998-2001			FS	
Rolling Fork	05140103	Marion	100.2 - 107.9	x						Prob	Jun-99	resample			
Rowan Creek	05140103	Nelson	0.0 - 7.1	x	x					KDOW	Oct-95	FS			
Salt Lick Creek	05140103	Marion	0.0 - 8.4	x	x	x				RR; KDOW	May-92 - Jul-99	FS			
Scrubgrass Branch	05140103	Boyle	0.2 - 0.7	x	x					EKU	Jun-99	FS			
Sulphur Creek	05140103	Anderson	0.0 - 9.7	x	x	x				RR	Jun-99	FS			
Town Creek	05140103	Nelson	0.0 - 4.0	x	x					KDOW	Oct-95	FS			
UT to Rolling Fork	05140103	Marion	0.0 - 0.6				x			TMDL	Oct-00	NS			
Wilson Creek	05140103	Bullitt	0.0 - 17.0	x	x	x	x	x		RR; KDOW; MSD	May-92 - Oct-99	FS	FS		
Ohio River Minor Tributaries															
Lick Run Creek	05140104	Breckinridge	0.0 - 3.5	x						KDFWR	Aug-99	PS			
Doe Run	05140104	Meade	4.1 - 7.9			x	x			KDOW	Apr-99 - Mar-00	FS	NS		
Hardins Creek	05140104	Breckinridge	0.0 - 5.0	x						KDFWR	Aug-99	NS			
Otter Creek	05140104	Meade	0.0 - 10.7	x	x	x	x	x		RR; MSD	May-92; Dec-97 - Oct-99	FS	PS		
Sinking Creek	05140104	Breckinridge	5.9 - 8.9	x						KDFWR	Aug-99	resample			
Sinking Creek	05140104	Breckinridge	8.9 - 15.6	x	x	x	x	x	x	KDOW	Apr-99 - Mar-00	PS	NS	FS	
Sinking Creek	05140104	Breckinridge	15.6 - 39.8	x						KDFWR	Aug-99	FS			
Wolf Creek	05140104	Meade	0.0 - 8.7	x						KDFWR	Aug-99	maybe			
Yellowbank Creek	05140104	Breckinridge	0.0 - 6.4	x	x	x				RR; KDFWR	May-92 - Aug-99	FS			

^aMacroinvert = macroinvertebrates

WQ = water quality

Fecal = fecal coliform bacteria

Tissue = fish tissue

DW = drinking water

^b KDW = Kentucky Division of Water

DMRs = Discharge monitoring reports submitted by permit holders

EKU = Eastern Kentucky University

KDFWR = Kentucky Dept Fish & Wildlife

KSNPC = Kentucky State Nature Preserves Commission

MSD = Metropolitan Sewer District (Louisville)

MSU = Morehead State University

NPS = Nonpoint Source Program (DOW)

Prob = Probabilistic (random) monitoring by DOW

SD#1 = Sanitation District #1 (Northern KY)

TMDL = Sampling for purposes of determining total maximum daily load

USFS = U.S. Forest Service

^cWAH = warm water aquatic life

PCR = primary contact recreation

FC = fish consumption

DWS = domestic water supply

Appendix 3-2. Monitoring Information from the
Cumberland/Tennessee/Mississippi Basin Management Unit

Monitoring Results
Cumberland/Tennessee/Mississippi Basin Management Unit

Stream	Hydro	County	Segment	Sample Type^a						Program^b	Date	Use Support^c				GNIS	
				Unit	Milepoints	Fish	Macroinv	Algae	WQ	Fecal	Tissue	DW	WAH	PCR	FC	DWS	
Upper Cumberland River																	
Adams Branch	05130101	Whitley	0.0 - 1.5	x	x								Coal	Jun-94	FS		510215
Bad Branch	05130101	Letcher	0.0 - 3.0	x	x	x							RR	Jul-00	FS		486198
Bailey Creek	05130101	Harlan	0.0 - 2.5					x					KDOW	May-98 - Oct-00		NS	510346
Bark Camp Creek	05130101	Whitley	0.0 - 7.6	x	x	x							RR; COE	Oct-91-Jul-00			510394
Bennetts Fork	05130101	Bell	0.0 - 7.5	x	x	x							KDOW; KDFWR	Aug-00	PS		486865
Bens Fork	05130101	Bell	0.0 - 2.4	x	x								USFS; KDFWR; Coal	Apr-00 - Oct-01	FS		486872
Big Indian Creek	05130101	Knox	0.0 - 5.1	x									KDFWR	Sep-00	NS		487197
Black Snake Branch	05130101	Bell	0.0 - 2.0	x	x								USFWS; KDFWR; Coal	Jun-94	FS		487425
Blake Fork	05130101	Whitley	0.0 - 4.6	x									KDFWR	Aug-00	Maybe		510776
Breedens Creek	05130101	Harlan	0.0 - 2.2	x	x								USFWS; Coal	Jun-95	FS		510901
Brownies Creek	05130101	Bell	9.0 - 16.0	x	x	x							RR	Jul-00	FS		488020
Brush Creek	05130101	Knox	0.0 - 2.8	x									KDFWR	Aug-00	NS		488072
Buck Creek	05130101	Whitley	0.4 - 2.8	x	x								USFWS; Coal	Oct-90 - Oct-99	FS		510998
Bucks Branch	05130101	Whitley	0.0 - 2.3		x								USFS	Feb-94 - Sep-95	NS		511033
Bunches Creek	05130101	Whitley	0.0 - 3.3	x	x	x							RR	Jul-00	FS		511064
Cane Creek	05130101	Whitley	0.0 - 1.0		x								RR; NPS	Apr-00	FS		511185
Cannon Creek	05130101	Bell	5.8 - 7.7	x	x					x			KSNPC; Coal; DW	Jan-96	FS	FS	488885
Catron Creek	05130101	Harlan	0.0 - 8.5	x				x					KDFWR; KDOW	May-98 - Oct-00	FS	NS	489099
Clear Creek	05130101	Bell	1.2 - 3.4	x	x	x							KDOW	Aug-00	FS		489616
Clear Fork	05130101	Whitley	0.0 - 2.9	x	x	x	x						KDOW	Apr 00 - Mar 01	FS		511399
Clover Fork	05130101	Harlan	1.6 - 8.5				x	x					KDOW; DMR	Oct-97 - Sept-01	FS	NS	511423
Clover Fork	05130101	Harlan	8.5 - 10.6				x		x		x		KDOW; DW	May 98 - Oct 00		NS	511423
Clover Fork	05130101	Harlan	10.6 - 15.0				x		x				KDOW	May 98 - Oct 00		NS	511423
Clover Fork	05130101	Harlan	15.0 - 21.6	x	x	x							KDOW	Jul-00	FS		511423
Clover Fork	05130101	Harlan	29.1 - 30.3		x								Prob	Jul-00	PS		511423
Cloverlick Creek	05130101	Harlan	0.0 - 5.0	x									KDOW	carryover	NS		511427
Cogur Fork	05130101	McCreary	0.0 - 7.9	x	x	x							RR	Jul-00	FS		511453
Colliers Creek	05130101	Letcher	0.0 - 3.9	x	x								USFWS; Coal	Jun-89 - Oct-01	FS		485675
Craig Creek	05130101	Laurel	7.7 - 9.8	x									COE	Jul-00	FS		511617
Crane Creek	05130101	Harlan	0.0 - 2.3		x								COE	Jul-00	FS		490282
Cranks Creek	05130101	Harlan	1.9 - 2.5		x								COE	Jul-00	PS		490293
Cumberland River	05130101	Whitley	562.2 - 569.3	x	x	x		x	x				KDOW; DW	Jul-97 - Sept-00	FS	FS	517018
Cumberland River	05130101	Whitley	574.8 - 587.9							x			DW	1999- 2001		FS	517018
Cumberland River	05130101	Whitley	635.5 - 649.6							x			DW	1999- 2001		FS	51708
Cumberland River	05130101	Bell	649.6 - 653.1					x					KDOW	May 98 - Oct 00		NS	517018
Cumberland River	05130101	Bell	653.1 - 654.4					x					KDOW	May 98 - Oct 00		FS	517018
Cumberland River	05130101	Harlan	660.1 - 666.7				x						KDOW	May 98 - Mar-01	PS		517018
Cumberland River	05130101	Harlan	674.9 - 684.8	x	x	x			x				KDOW	Sep-97 - Aug-00	FS	FS	517018
Cumberland River	05130101	Harlan	684.8 - 687.5					x					KDOW	May 98 - Oct 00		FS	517018
Cumberland River	05130101	Harlan	687.5 - 691.3					x					KDOW	May 98 - Oct 00		NS	517018
Cumberland River	05130101	Harlan	691.3 - 693.8					x					KDOW	May 98 - Oct 00		NS	517018
Cumberland River	05130101	Harlan	693.8 - 694.2					x					KDOW; DMR	Oct-97 - Sept-01		NS	517018
Dog Slaughter Creek	05130101	Whitley	0.0 - 1.1	x	x	x							RR	Jun-Jul-00	FS		511853

Monitoring Results
Cumberland/Tennessee/Mississippi Basin Management Unit

Stream	Hydro	County	Segment	Sample Type^a							Program^b	Date	Use Support^c				GNIS	
				Unit	Milepoints	Fish	Macroinv	Algae	WQ	Fecal	Tissue	DW	WAH	PCR	FC	DWS		
Upper Cumberland River (Cont.)																		
Eagle Creek	05130101	McCreary	0.0 - 6.3	x	x	x							RR	May-91 - Jul-00	FS			511976
East Fork Lynn Camp	05130101	Knox	0.0 - 4.5	x									KDFWR	Sep-00	PS			511990
Ewing Creek	05130101	Harlan	0.0 - 2.7		x								RR; NPS	Apr-00	NS			491860
Franks Creek	05130101	Letcher	3.0 - 4.8		x								RR; NPS	Apr-00	FS			492462
Fugitt Creek	05130101	Harlan	0.5 - 4.9	x	x	x							RR; Coal	1996 - Jul-00	FS			512261
Goodin Creek	05130101	Knox	2.1 - 2.3		x								Prob	Jul-00	PS			492978
Greasy Creek	05130101	Bell	0.0 - 3.7	x						x			KDOW; KDFWR	1994 - Aug-00	Maybe	PS		493234
Hatchell Branch	05130101	McCreary	0.0 - 1.0		x								RR; NPS	Apr-00	PS			512583
Indian Creek	05130101	McCreary	2.3 - 6.7	x	x	x							RR; KDFWR	Jul-Aug-00	FS			512901
Jackie Branch	05130101	Whitley	0.0 - 1.7		x								RR; NPS	Apr-00	FS			512948
Jellico Creek	05130101	Whitley	0.0 - 4.6	x	x	x							KDOW	Sep-00	FS			512988
Jellico Creek	05130101	Whitley	4.6 - 5.8				x						KDOW	Apr-00 - Mar-01	FS			512988
Jenneys Branch	05130101	McCreary	0.0 - 3.4		x								Prob	Aug-00	PS			512993
Kilburn Fork	05130101	McCreary	0.0 - 6.3	x	x								USFS; KSNPC; USFWS	Jun-94 - Jul-99	FS			513138
Laurel Creek	05130101	McCreary	0.0 - 9.2	x									KDFWR	Aug-00	FS			513239
Laurel Fork	05130101	Whitley	4.3 - 10.3	x									KSNPC; RR	Jun-94 - Aug-01	FS			496040
Laurel Fork	05130101	Whitley	10.3 - 13.9	x									KDFWR	Aug-00	NS			496040
Laurel Fork	05130101	Whitley	16.9 - 19.1	x									KSNPC	Jun-94	FS			496040
Laurel Fork	05130101	McCreary	0.0 - 2.2	x									KDFWR	Aug-00	FS			513244
Laurel River	05130101	Laurel	0.0 - 2.3		x								COE	Jul-00	NS			513263
Laurel River	05130101	Laurel	24.9 - 27.9		x								COE	Jul-00	NS			513263
Laurel River	05130101	Laurel	31.7 - 36.6			x							KDOW	Apr-00 - Mar-01	FS			513263
Laurel River	05130101	Laurel	36.6 - 46.3	x	x	x							KDOW	Jul-00	NS			513263
Left Fork Straight Creek	05130101	Bell	0.0 - 6.5	x									KDFWR	Jul-00	NS			513326
Little Clear Creek	05130101	Bell	0.0 - 2.9	x	x								KDOW	1994	PS			496670
Little Laurel River	05130101	Laurel	0.0 - 8.3	x	x	x	x						KDOW; COE; TMDL	Apr-00 - Mar-01	NS			513497
Little Laurel River	05130101	Laurel	8.3 - 12.4	x									KDFWR	Sep-00	NS			513497
Little Laurel River	05130101	Laurel	12.4 - 14.6				x						TMDL	Apr-00 - Mar-01	NS			513497
Little Poplar Creek	05130101	Knox	0.0 - 2.8	x									KDFWR	Aug-00	PS			496830
Looney Creek	05130101	Harlan	0.0 - 2.8					x					KDOW	May-98 - Oct-00		NS		497165
Looney Creek	05130101	Harlan	3.8 - 5.5					x					KDOW	May 98 - Oct 00		PS		497165
Lynn Camp Creek	05130101	Laurel	0.8 - 2.9		x			x					COE; KDOW	May-96 - Jul-00	NS	NS		513739
Lynn Camp Creek	05130101	Knox	4.6 - 10.7	x									KDFWR	Sep-00	PS			513739
Marsh Creek	05130101	McCreary	0.0 - 8.6	x	x	x	x						KDOW	Apr-00 - Mar-01	FS			513798
Marsh Creek	05130101	McCreary	8.6 - 13.3	x	x	x							RR	Jul-00	FS			513798
Martins Fork	05130101	Harlan	0.0 - 1.2				x	x					KDOW	May-98 - Oct-00	FS	NS		497628
Martins Fork	05130101	Harlan	1.2 - 7.0		x								Prob	Jul-00	FS			497628
Martins Fork	05130101	Harlan	10.2 - 17.0		x					x			COE; DW	Jul-00	PS		FS	497628
Martins Fork	05130101	Harlan	17.0 - 19.8		x								COE	Jul-00	FS			497628
Martins Fork	05130101	Harlan	25.0 - 37.2	x	x	x							KDOW; Prob	Jul-Aug-00	FS			497628
MeaKDOW Creek	05130101	Whitley	0.0 - 6.8	x									KDFWR	Sep-00	PS			497981
Middle Fork Richland Creek	05130101	Knox	0.0 - 1.2	x									KDFWR	Sep-00	PS			498135
Mill Creek	05130101	McCreary	0.0 - 3.6	x									KDFWR	Jun-87	FS			513983
Moore Branch	05130101	Bell	0.0 - 0.4				x	x					DMR	Oct-97 - Sept-01	PS	PS		498528

Monitoring Results
Cumberland/Tennessee/Mississippi Basin Management Unit

Stream	Hydro	County	Segment	Sample Type^a							Program^b	Date	Use Support^c				GNIS	
				Unit	Milepoints	Fish	Macroinv	Algae	WQ	Fecal	Tissue	DW	WAH	PCR	FC	DWS		
Upper Cumberland River (Cont.)																		
Moore Creek	05130101	Knox	0.0 - 8.2	x	x								USFWS; KSNPC; Coal	Jun-94 - Jun-00	FS			498551
Mud Creek	05130101	Whitley	0.0 - 5.1	x									KDFWR	Aug-00	PS			514128
Mud Lick	05130101	Knox	0.0 - 2.2	x									KSNPC	Jun-93	FS			498997
North Fork Dog Slaughter Creek	05130101	Whitley	0.0 - 0.7	x	x	x							RR	Jul-00	FS			514288
Patterson Creek	05130101	Whitley	0.0 - 4.9	x									KDFWR	Sep-00	FS			514450
Patterson Creek	05130101	Whitley	7.4 - 8.6	x									KSNPC; USFWS	Jun-90	FS			514450
Poor Fork Cumberland River	05130101	Harlan	0.0 - 8.1	x	x	x	x			x	x		KDOW; DW	April-00 - Mar 01	FS	FS	FS	514707
Poor Fork Cumberland River	05130101	Harlan	14.9 - 16.3		x						x		Prob; DW	Jul-00	PS		FS	514707
Poor Fork Cumberland River	05130101	Harlan	16.3 - 23.7					x					KDOW	May-98 - Oct 00		NS		514707
Poor Fork Cumberland River	05130101	Harlan	25.1 - 27.5					x					KDOW	May-98 - Oct 00		NS		514707
Poor Fork Cumberland River	05130101	Letcher	41.4 - 51.7	x	x	x							RR	Jul-00	FS			514707
Presley House Br	05130101	Letcher	0.2 - 1.5		x								RR; NPS	Apr-00	FS			501293
Puckett Creek	05130101	Bell	0.0 - 5.1	x									KDFWR	Aug-00	FS			501413
Richland Creek	05130101	Knox	0.0 - 6.2	x			x						KDOW; KDFWR	Apr-00 - Mar-01	NS			514915
Richland Creek	05130101	Knox	11.2 - 14.3	x	x	x							KDOW	Jul-00	FS			514915
Robinson Creek	05130101	Laurel	8.2 - 11.8	x	x	x							KDOW	Jul-00	FS			515013
Rock Creek	05130101	McCreary	0.0 - 5.7	x	x								USFS; USFWS; KSNPC	Feb-93 - Aug-95	FS			515022
Ross Branch	05130101	Whitley	0.0 - 1.6	x									KSNPC; USFWS	Jun-85	FS			515113
Ryans Creek	05130101	McCreary	0.0 - 5.3	x									KDFWR; DSMRE	Feb-94 - Sep-95	NS	NS		515156
Shillalah Creek	05130101	Bell	0.0 - 5.5		x	x							RR	Jul-00	FS			503367
Sims Fork	05130101	Bell	0.0 - 5.2										Coal	Jun-94	NS			515430
South Fork Dog Slaughter Creek	05130101	Whitley	0.0 - 4.6	x	x	x							RR; KDFWR; KSNPC	Jun-90 - Jul-00	FS			515543
Stinking Creek	05130101	Knox	0.0 - 2.1	x	x	x							KDOW	Aug-00	PS			515716
Stoney Fork	05130101	Bell	0.0 - 2.4	x									KDFWR	Jul-00	NS			515733
Stony Fork	05130101	Bell	0.0 - 5.2	x									KDFWR	Aug-00	NS			504506
Straight Creek	05130101	Bell	0.0 - 1.7				x	x					KDOW	May-98 - Mar-01	FS	NS		515746
Straight Creek	05130101	Bell	4.0 - 11.3	x	x	x							KDOW	Aug-00	FS			515746
UT to Acorn Fork	05130101	Knox	0.0 - 0.9	x									Coal	Jun-00	FS			510201-1.8
UT to Bridge Fork	05130101	McCreary	0.0 - 0.1				x						DMR	Oct-97 - Sept-01	PS			510913-5.5
UT to Jenneys Branch	05130101	McCreary	0.0 - 1.1		x								RR; NPS	Apr-00	NS			512993-3.4
UT to Little Laurel River	05130101	Laurel	0.0 - 1.4		x								Prob	Jul-00	NS			513497-15.8
Watts Creek	05130101	Whitley	0.0 - 1.3	x	x	x							KDOW; KDFWR	Jul-Aug-00	FS			516250
Watts Creek	05130101	Harlan	2.2 - 4.3	x	x								NPS; KDFWR	Jun-94 - Mar-01	FS			516251
Whitley Branch	05130101	Laurel	0.0 - 1.0				x						KDOW	May-00 - Mar-01	NS			516339
Whitley Branch	05130101	Laurel	1.0 - 2.5				x						KDOW	1996-97		NS		516339
Wolf Creek	05130101	Whitley	0.0 - 1.8	x									KDFWR	Aug-00	NS			516433
Yellow Creek	05130101	Bell	0.1 - 0.8		x								Prob	Jul-00	PS			507211
Yellow Creek	05130101	Bell	0.8 - 3.2	x			x						KDFWR; KDOW	Jun-94; Apr-00 - Mar-01	PS			507211
Yellow Creek	05130101	Bell	8.9 - 10.3		x								Prob	Jul-00	FS			507211
Yellow Creek	05130101	Bell	14.9 - 16.0	x	x	x							KDOW; KDFWR	Aug-00	FS			507211
Yocom Creek	05130101	Harlan	0.0 - 6.5					x					KDOW	May-98 - Oct-00		NS		507228
Youngs Creek	05130101	Whitley	0.0 - 5.4	x									KDFWR	Aug-00	FS			516519

Monitoring Results
Cumberland/Tennessee/Mississippi Basin Management Unit

Stream	Hydro	County	Segment	Sample Type^a							Program^b	Date	Use Support^c				GNIS	
				Unit	Milepoints	Fish	Macroinv	Algae	WQ	Fecal	Tissue	DW	WAH	PCR	FC	DWS		
Rockcastle River																		
Brush Creek	05130103	Rockcastle	1.1 - 7.5	x					x				USFS; Groundwater	1994-Aug-99	FS	NS		510966
Cane Creek	05130102	Laurel	0.0 - 11.5	x	x	x							RR; Prob	Jun-92 - Jul-00	FS			511189
Clear Creek	05130102	Rockcastle	3.4 - 6.4		x								USFS	May-00	FS			511394
Crooked Creek	05130102	Rockcastle	6.4 - 12.2		x								USFS	May-95	FS			511648
Dry Fork	05130102	Rockcastle	0.0 - 3.4	x									KDFWR	Aug-00	FS			511923
Horse Lick Creek	05130102	Jackson	0.0 - 12.2	x	x	x	x						USFS; RR; KDOW	Oct 92 - Mar-01	Maybe			512798
Laurel Fork	05130102	Jackson	0.0 - 12.2	x	x	x							RR; KSNPC; EKU	Jun-88 - Jul-00	FS			513257
Line Creek	05130102	Pulaski	0.0 - 1.6		x								USFS	Jun-00	FS			513433
Little Rockcastle River	05130102	Laurel	0.0 - 2.1	x	x	x							KDOW	Jul-00	FS			513518
Martin Creek	05130102	Clay	0.0 - 1.2	x									KDFWR	Aug-00	FS			513806
McCammon Branch	05130102	Jackson	0.0 - 2.7		x								USFS	May-00	FS			513844
Middle Fork Rockcastle River	05130102	Jackson	0.0 - 7.8	x	x	x	x	x					RR; KDOW	Apr-00 - Mar-01	FS			513937
Mitchell Creek	05130102	Laurel	0.0 - 3.6	x	x								EKU	Jun-Oct-99	NS			514033
Ned Branch	05130102	Laurel	0.0 - 1.9	x									KSNPC	Jun-93	FS			514209
Peter Branch	05130102	Jackson	0.0 - 1.2		x								USFS	Mar-94 - Feb-95	FS			514506
Pond Creek	05130102	Jackson	0.0 - 6.3	x									KDFWR	Aug-00	FS			514692
Powder Mill Creek	05130102	Laurel	0.0 - 4.6	x	x								EKU	Jun-Oct-99	FS			514748
Raccoon Creek	05130102	Laurel	0.0 - 2.7	x									KDFWR	Aug-00	PS			514818
Renfro Creek	05130102	Rockcastle	0.0 - 3.0	x									KDFWR	Aug-00	PS			514888
Rockcastle River	05130102	Laurel	12.5 - 16.9		x								USFS	Jun-00	FS			515038
Rockcastle River	05130102	Rockcastle	16.9 - 31.2	x	x	x	x		x				KDOW; COE	Oct-97 - Mar-01	FS	FS		515038
Rockcastle River	05130102	Rockcastle	43.9 - 51.5	x	x	x							KDOW	Aug-00	FS			515038
Roundstone Creek	05130102	Rockcastle	0.0 - 2.6				x						KDOW	April-00 - Mar-01	FS			515136
Roundstone Creek	05130102	Rockcastle	4.7 - 6.0	x	x	x							KDOW	Jun-00	FS			515136
Roundstone Creek	05130102	Rockcastle	16.9 - 23.7	x									KDFWR	Aug-00	PS			515136
Sinking Creek	05130102	Laurel	0.0 - 9.8	x	x	x							RR; USFS; EKU	Jun-99 - Sep-00	FS			515433
Sinking Creek	05130102	Laurel	9.8 - 13.1		x								USFS	Jun-00	FS			515433
Sinking Creek	05130102	Laurel	13.1 - 16.0	x	x								EKU	Jun-99 - Oct-99	FS			515433
Skegg Creek	05130102	Rockcastle	0.0 - 3.2	x		x							KDOW	Jun-00	PS			515451
Skegg Creek	05130102	Rockcastle	3.3 - 10.9	x									KDFWR	Aug-00	FS			515451
South Fork Rockcastle River	05130102	Jackson	4.4 - 5.6	x	x	x	x	x					KDOW; Prob	Apr-00 - Mar-01	FS			515548
South Fork Rockcastle River	05130102	Laurel	20.8 - 21.5		x								Prob	Jul-00	NS			515548
South Fork Rockcastle River	05130102	Laurel	21.5 - 25.5	x									KDFWR	Aug-00	PS			515548
UT to Pond Creek	05130102	Jackson	0.0 - 0.2				x						DMR	Oct-97 - Sep-01	PS			514692-6.0
UT to Pond Creek	05130102	Jackson	0.0 - 0.2				x	x					DMR	Oct-97 - Sep-01	PS	PS		514692-7.6
White Oak Creek	05130102	Laurel	0.0 - 1.0		x								USFS	Jun-00	NS			516320
White Oak Creek	05130102	Laurel	1.0 - 5.7	x	x								EKU	Jun-Oct-99	FS			516320
White Oak Creek	05130102	Rockcastle	0.9 - 1.9		x								Prob	Jul-00	FS			516322
Upper Cumberland River																		
Bear Creek	05130103	Cumberland	0.0 - 2.8	x									KDFWR	Jul-00	maybe			486551
Beaver Creek	05130103	McCreary	0.0 - 6.5	x	x	x							RR; USFS	Nov-93 - Jul-00	FS			510487
Beaver Creek	05130103	Wayne	21.0 - 21.4		x								COE	Jul-Aug-00	FS			510488
Beaver Creek	05130103	Wayne	21.4 - 38.8	x	x	x							KDOW	Jun-00	FS			510488

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Stream	Hydro	County	Segment	Sample Type^a							Program^b	Date	Use Support^c				GNIS	
				Unit	Milepoints	Fish	Macroinv	Algae	WQ	Fecal	Tissue	DW	WAH	PCR	FC	DWS		
Upper Cumberland River (Cont.)																		
Bee Lick Creek	05130103	Pulaski	0.0 - 5.7	x									KDFWR	Sep-00	FS			486678
Big Clifty Creek	05130103	Pulaski	1.1 - 4.9	x									KDFWR	Sep-00	maybe			487156
Big Lily Creek	05130103	Russell	4.7 - 11.0	x	x	x							KDOW	Jun-00	FS			487217
Big Renox Creek	05130103	Cumberland	0.0 - 5.8	x									KDFWR	Jul-00	PS			487232
Briary Creek	05130103	Pulaski	0.0 - 4.4	x									KDFWR; KDOW	May-Sep-00	PS			487880
Brushy Creek	05130103	Pulaski	0.0 - 7.8	x	x	x							RR; KDOW; KDFWR	May-99 - Sept-00	FS			510974
Buck Creek	05130103	Pulaski	5.0 - 32.1	x	x	x	x						RR; KDOW; Prob	May-92 - Jul-00	FS			511000
Buck Creek	05130103	Pulaski	32.0 - 39.2	x	x								Prob; EKU	May-96 - Jun-00	FS			511000
Buck Creek	05130103	Pulaski	39.2 - 44.9	x	x								EKU	May-Jul-96	FS			511000
Buck Creek	05130103	Pulaski	44.9 - 45.4	x	x	x				x			EKU; KDOW	May-96 - Sep-00	FS	PS		511000
Buck Creek	05130103	Pulaski	45.4 - 51.4	x	x								EKU	May-Jul-96	FS			511000
Buck Creek	05130103	Lincoln	52.8 - 58.6	x	x								EKU	May-Jul-96	FS			511000
Cane Branch	05130103	McCreary	0.0 - 2.0		x								USFS	Nov-93 - Aug-95	NS			511181
Casey Fork	05130103	Cumberland	0.0 - 2.0	x									KDFWR	Jun-00	FS			489048
Clifty Creek	05130103	Pulaski	0.0 - 2.7	x									KDOW	Jun-99	FS			511409
Crab Orchard Creek	05130103	Pulaski	0.0 - 1.0	x									KDOW	May-98 - May-00	FS			490243
Crocus Creek	05130103	Cumberland	0.0 - 4.8			x	x						KDOW	Apr-00 - Mar-01	FS	FS		490359
Crocus Creek	05130103	Cumberland	4.8 - 13.8		x								Prob	Jul-00	PS			490359
Crocus Creek	05130103	Adair	13.8 - 16.9	x									KDFWR	Jul-00	PS			490359
Cumberland River	05130103	Russell	385.6 - 460.7			x	x		x				KDOW; DW	Oct-98 - Mar-01	FS	FS	FS	517018
Dry Branch	05130103	Pulaski	0.0 - 0.3			x							DMR	Oct-97 - Sep-01	PS			491160
Elk Spring Creek	05130103	Wayne	0.0 - 7.8	x									KDFWR	Aug-00	NS			491678
Ferris Fork Creek	05130103	Cumberland	0.0 - 1.2		x								Prob	Jun-00	NS			492053
Fishing Creek	05130103	Pulaski	17.3 - 27.1	x	x	x							KDOW	Jun-00	FS			492127
Gilmore Creek	05130103	Lincoln	0.0 - 4.7	x									KDOW	May-98	PS			492855
Harrods Fork	05130103	Cumberland	0.0 - 5.3	x									KDFWR	Jul-00	FS			493829
Helton Branch	05130103	McCreary	0.0 - 1.0	x	x								USFS	Oct-93 - Sep-95	FS			512642
Indian Creek	05130103	Pulaski	0.0 - 4.1	x									KDOW	Sep-97 - May-00	PS			494919
Kettle Creek	05130103	Monroe	0.0 - 6.8	x									KDFWR	Jul-00	maybe			495698
Little Hurricane Fork	05130103	McCreary	0.0 - 3.9		x								USFS	Oct-93 - Sept-95	FS			513491
Marrowbone Creek	05130103	Cumberland	0.0 - 2.8		x		x	x		x			Prob; KDOW	Apr-00 - Mar-01	PS	FS		497560
Marrowbone Creek	05130103	Cumberland	3.8 - 8.9	x	x	x							KDOW	Jun-00	FS			497560
Marrowbone Creek	05130103	Cumberland	8.9 - 13.5	dry									KDOW	Aug-00	NA			497560
Marrowbone Creek	05130103	Cumberland	13.5 - 15.2	x									KDFWR	Jun-00	FS			497560
McFarland Creek	05130103	Monroe	0.8 - 6.2	x									KDFWR	Jul-00	FS			497849
Meshack Creek	05130103	Monroe	0.0 - 2.8	x									KDFWR	Jul-00	FS			498082
Mud Camp Creek	05130103	Cumberland	0.0 - 1.3	x	x	x							RR	Jun-00	FS			498997
Otter Creek	05130103	Wayne	14.5 - 22.0	x	x	x							KDOW	Jul-00	FS			500027
Pilot Creek	05130103	Lincoln	0.7 - 2.5		x								Prob	Jun-00	FS			500639
Pitman Creek	05130103	Pulaski	4.6 - 5.7	x	x	x	x						COE; KDOW; DMR	Oct-97 - Sep-01	PS			514627
Pitman Creek	05130103	Pulaski	5.7 - 28.1	x	x	x							KDOW	Jul-00	FS			514627
Pitman Creek	05130103	Pulaski	25.1 - 26.0		x								Prob	Jul-00	FS			514627

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Stream	Hydro	County	Segment	Sample Type^a							Program^b	Date	Use Support^c				GNIS	
				Unit	Milepoints	Fish	Macroinv	Algae	WQ	Fecal	Tissue	DW	WAH	PCR	FC	DWS		
Upper Cumberland River (Cont.)																		
Pointer Creek	05130103	Pulaski	0.2 - 3.9	x									KDFWR	Sep-00	FS			500996
Rock Lick Creek	05130103	Pulaski	0.0 - 8.2	x									KDFWR	Sep-00	FS			502134
Sam Branch	05130103	Pulaski	0.1 - 0.5		x								Prob	Jun-00	PS			502871
Sinking Creek	05130103	Pulaski	0.0 - 1.8	x	x								KDOW	Oct-95	FS			503560
UT to Caney Fork	05130103	Russell	0.0 - 0.6		x								Prob	Jul-00	FS			488859-8.95
UT to Clifty Creek	05130103	Pulaski	0.0 - 0.5						x				DMR	Oct-97 - Sep-01		PS		511409-6.4
Wildcat Branch	05130103	Pulaski	0.0 - 2.1		x								USFS	Dec-93 - Jun-95	NS	NS		516359
South Fork Cumberland River																		
Bear Creek	05130104	McCreary	0.0 - 3.2	x	x								NPS	1996	NS			510462
Coffey Branch	05130104	McCreary	0.1 - 1.4		x								RR; NPS	Apr-00	FS			511447
Copperas Fork	05130104	McCreary	0.0 - 3.8		x								USFS	Feb-94 - Aug-95	NS			511533
Difficulty Creek	05130104	McCreary	0.0 - 3.5	x									KDFWR	Jun-96	FS			5130104
Little South Fork Cumberland River	05130104	McCreary	4.1 - 6.8		x								KDOW; COE	Jul-92 - Aug-00	FS			513527
Little South Fork Cumberland River	05130104	McCreary	6.8 - 9.3	x	x	x				x			KDOW	Sep-00	FS	FS		513527
Little South Fork Cumberland River	05130104	McCreary	14.9 - 16.3		x								Prob	Jul-00	Maybe			513527
Little South Fork Cumberland River	05130104	Wayne	18.3 - 35.6	x	x	x							RR	Jul-92 - July-00	FS			513527
Puncheoncamp Branch	05130104	McCreary	0.0 - 1.9		x								RR; NPS	May-00	FS			514797
Roaring Paunch Creek	05130104	McCreary	0.0 - 7.8	x	x	x							KDOW	Aug-00	FS			514993
Rock Creek	05130104	McCreary	0.0 - 4.1	x	x	x							KDOW	Sep-00	PS	PS		515024
Rock Creek	05130104	McCreary	4.1 - 11.1	x	x								NPS; KDFWR; KSNPC	Jun-94	FS			515024
Rock Creek	05130104	McCreary	16.6 - 21.9	x	x	x			x				KDOW	Aug-00	FS	PS		515024
South Fork Cumberland River	05130104	McCreary	43.9 - 49.5		x	x	x						KDOW	Oct-97 - Apr-01	FS			515542
South Fork Cumberland River	05130104	McCreary	49.5 - 55.1		x	x							KDOW	Aug-00	FS			515542
UT to Rock Creek	05130104	McCreary	0.0 - 1.4		x								RR; NPS	Apr-00	FS			515024-0.55
UT to Rock Creek	05130104	McCreary	0.0 - 1.2		x								RR	Apr-00	FS			515024-9.35
UT to Rock Creek	05130104	McCreary	0.0 - 1.9		x								RR; NPS	Apr-00	FS			515024-17.2
Watts Branch	05130104	McCreary	0.0 - 2.6		x								RR; NPS	Apr-00	FS			516249
Obey River/Dale Hollow Lake																		
Clear Fork Branch	05130105	Clinton	2.6 - 3.6					x					DMRs	Oct-98 - Sept 01		PS		489626
Hays Creek	05130105	Clinton	8.6 - 9.6		x								Prob	Jul-00	FS			493936
Howards Creek	05130105	Clinton	0.6 - 3.4	x	x	x							RR	Jun-00	FS			494681
Spring Creek	05130105	Clinton	2.5 - 3.7	x	x	x							RR; COE	Jul-Aug-00	FS			504128
Spring Creek	05130105	Clinton	3.7 - 7.3	x	x	x							RR; Prob	Nov-99 - Jun-00	FS			504128
Sulpher Creek	05130105	Clinton	1.7 - 5.1	x	x	x							RR	Jun-00	FS			504729
Lower Cumberland River																		
Casey Creek	05130205	Trigg	0.0 - 3.6		x			x					MSU; TMDL	Jun-00 - Oct-01	PS	FS		489043
Claylick Creek	05130205	Crittenden	2.0 - 4.8	x	x	x		x		x			RR; MSU	May-Oct-00	FS	NS		489591
Claylick Creek	05130205	Crittenden	4.8 - 10.6		x								MSU	Jun-00	maybe			489591
Claylick Creek	05130205	Crittenden	14.8 - 15.7		x								Prob	May-00	FS			489591
Stream																		
Lower Cumberland River (Cont.)																		
Crooked Creek	05130205	Trigg	4.0 - 9.4	x	x	x							RR; TVA	Mar-96 - Jul-00	FS			490374

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Cumberland River	05130205	Livingston	0.0 - 30.5			x			x	ORSANCO; DW	Oct-97 - Sep-01	FS		FS	517018
Donaldson Creek	05130205	Trigg	6.0 - 9.6	x	x	x				RR; MSU	Mar-Jun-01	FS			491000
Donaldson Creek	05130205	Trigg	9.6 - 14.2		x					MSU	Jun-00	PS			491000
Dry Creek	05130205	Trigg	4.9 - 7.4		x					MSU	Jun-00	NS			491170
Dry Creek	05130205	Caldwell	0.0 - 3.5	x			x			MSU	May-Oct-00	PS	maybe		491176
Eddy Creek	05130205	Lyon	11.9 - 14.1				x			MSU	May-Oct-00		NS		491550
Eddy Creek	05130205	Caldwell	14.1 - 16.9	x						MSU	Jul-00	FS			491550
Eddy Creek	05130205	Caldwell	16.9 - 19.7	x			x			MSU; COE	May-Oct-00	PS	maybe		491550
Ferguson Creek	05130205	Livingston	0.0 - 1.1				x			MSU	May-Oct-00		NS		492034
Ferguson Creek	05130205	Livingston	1.1 - 2.2		x					MSU	Jun-00	PS			492034
Franklin Creek	05130205	Trigg	0.0 - 2.4	dry						KDOW	May-00	NA			492452
Fulton Creek	05130205	Lyon	2.6 - 6.0	x	x					TVA	Mar-96	FS			517018-52.7
Hammond Creek	05130205	Lyon	2.0 - 2.2							DMRs	Oct-98 - Oct-01	PS			493638
Hickory Creek	05130205	Livingston	0.0 - 3.8	x			x			MSU	May-Oct-00	FS	NS		494122
Kenady Creek	05130205	Trigg	0.0 - 3.9	x			x			MSU	May-Oct-00	PS	maybe		495638
Laura Furnace Creek	05130205	Trigg	0.0 - 2.9	dry						KDOW	May-00	NA			496992
Little River	05130205	Trigg	20.4 - 23.6	x						Prob; COE	Jun-Oct-00	NS			496838
Little River	05130205	Trigg	23.6 - 33.1	x	x	x	x	x	x	KDOW	Oct-98 - Oct-01	PS	FS	PS	496838
Little River	05130205	Trigg	33.1 - 34.4	x			x			Prob	Jun-00 - Oct-01	NS	PS		496838
Little River	05130205	Trigg	34.4 - 48.4	x			x			MSU; TMDL	Jul-00 - Oct-01	maybe	PS		496838
Little River	05130205	Christian	48.4 - 53.8	x						Prob	Jun-00	NS			496838
Little River	05130205	Christian	53.8 - 61.0	x			x			MSU; TMDL	Jun-00 - Oct-01	PS	NS		496838
Livingston Creek	05130205	Crittenden	4.6 - 7.0	x		x	x			KDOW; MSU	May-Oct-00	NS	NS		496913
Livingston Creek	05130205	Crittenden	11.6 - 15.4	x						MSU	Jun-00	PS			496913
Long Creek	05130205	Trigg	1.3 - 3.4	x	x					TVA	Mar-96	FS			497092
Long Pond Branch	05130205	Trigg	2.7 - 3.1	x						Prob	Jun-00	NS			497133
Lower Branch North Fork Little River	05130205	Christian	3.7 - 9.2	x						MSU	Jul-Dec-00	PS			497263
Muddy Fork Little River	05130205	Trigg	7.0 - 7.9			x	x			KDOW	Apr-00 - Mar-01	FS	FS		499043
Muddy Fork Little River	05130205	Trigg	14.5 - 26.6	x						MSU	Jun-00	NS			499043
North Fork Little River	05130205	Christian	0.0 - 0.3	x		x	x			MSU; TMDL; DMR	Oct-97 - Sep-01	NS	PS		499555
North Fork Little River	05130205	Christian	0.3 - 6.9	x						MSU	Jul-Sep-00	PS			499555
North Fork Little River	05130205	Christian	6.9 - 11.6	x		x				MSU; DMR	Oct-97 - Sep-01	NS			499555
North Fork Little River	05130205	Christian	11.6 - 12.3	x						Prob	Jun-00	NS			499555
North Fork Little River	05130205	Christian	12.3 - 18.6			x		x		TMDL; DW	Sept-00 - Oct-01		NS	FS	499555
Richland Creek	05130205	Livingston	0.6 - 5.3	x		x				MSU	May-Oct-00	maybe	NS		501820
Sandy Creek	05130205	Livingston	0.0 - 2.3	x		x				MSU	May-Oct-00	maybe	NS		502979
Sinking Fork	05130205	Trigg	2.2 - 5.6	x		x				KDOW; MSU	Apr-00 - Mar-01	PS	FS		503569
Sinking Fork	05130205	Christian	13.6 - 16.6	x						Prob	Jun-00	NS			503569
Sinking Fork	05130205	Christian	24.2 - 30.5	x						MSU	Jul-Sep-00	FS			503569
Skinframe Creek	05130205	Lyon	0.0 - 4.8	x						MSU	May-Oct-00	PS	NS		503607
Skinner Creek	05130205	Trigg	0.0 - 5.8	x			x			MSU	Jun-Sep-00	NS			503615
South Fork Little River	05130205	Christian	0.0 - 10.5	x		x		x		MSU; TMDL	Jul-00 - Oct-01	NS	NS		503934

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				Unit	Milepoints	Fish	Macroinv	Algae	WQ	Fecal	Tissue	DW	WAH	PCR	FC	DWS		
Lower Cumberland River (Cont.)																		
South Fork Little River	05130205	Christian	10.5 - 19.9		x				x				MSU; TMDL	Jul-00 - Oct-01	PS	NS		503934
South Fork Little River	05130205	Christian	20.9 - 25.4		x								MSU	Jul-00	NS			503934
Spring Creek	05130205	Lyon	3.0 - 3.7		x								Prob	May-00	NS			504129
Sugar Creek	05130205	Christian	1.0 - 1.4		x								Prob	Jun-00	NS			504647
Sugar Creek	05130205	Livingston	2.1 - 6.7	x	x	x			x				RR; MSU	May-Oct-00	FS	PS		504655
Upper Branch North Fork Little River	05130205	Christian	0.0 - 2.7		x								MSU	Jun-Sep-00	PS			505861
Red River																		
Dry Fork Creek	05130206	Christian	5.0 - 5.8		x								Prob	Jun-00	NS			491216
Elk Fork	05130206	Todd	7.5 - 21.9	x	x	x							RR; KDRWR	Jul-Aug-00	FS			491660
Elk Fork	05130206	Todd	22.0 - 29.0	x									KDFWR	Jul-00	NS			491660
Little Whippoorwill Creek	05130206	Logan	0.0 - 4.2	x									KDFWR	Jun-00	FS			496894
Pleasant Grove Creek	05130206	Logan	0.0 - 2.2		x				x				NPS; UK(Curren)	Apr-94 - Apr-98	PS	NS		500832
Red River	05130206	Logan	50.1 - 54.2	x	x	x	x	x	x				KDFWR; KDOW	Aug-97 - Mar-01	PS	FS		501672
Red River	05130206	Logan	54.2 - 56.3	x									KDFWR	Jul-00	resample			501672
Red River	05130206	Logan	56.3 - 65.0	x	x	x			x				KDOW	Aug-00	FS			501672
Red River	05130206	Logan	65.0 - 73.5	x									KDFWR	Jul-00	maybe			501672
Red River	05130206	Simpson	73.5 - 80.5	x									KDFWR	Jun-00	PS			501672
South Fork Red River	05130206	Logan	0.0 - 5.3	x									KDFWR	Jun-00	maybe			503943
South Fork Red River	05130206	Logan	5.3 - 6.5						x				DW	1998 - 2001			FS	503943
Sulpher Spring Creek	05130206	Simpson	0.0 - 6.6	x									KDFWR	Jun-00	FS			504760
West Fork Red River	05130206	Christian	14.5 - 26.4	x	x	x	x	x	x			RR; KDOW; KDFWR	Jun-94 - Apr-01	FS	FS		506445	
Whippoorwill Cr	05130206	Logan	0.0 - 13.0	x	x	x	x	x	x			RR; KDOW	Oct-92 - Mar-01	FS	FS		506557	
Ohio River Minor Tributaries																		
Bayou Creek	05140206	McCracken	0.0 - 6.5	x	x		x						UK; DOE	1988 - 2001	NS			486491
Clanton Creek	05140206	Ballard	0.0 - 4.9	x									KDFWR	Jul-00	NS			489524
Humphrey Creek	05140206	Ballard	0.0 - 3.4		x				x				MSU; Prob	May-Oct 00	PS	FS		494758
Humphrey Creek	05140206	Ballard	3.4 - 11.0	x	x	x		x	x				RR; MSU	May-Oct-00	FS	PS		494758
Humphrey Creek	05140206	Ballard	11.0 - 12.2					x	x				DMR	Oct-97 - Sep-01	PS	PS		494758
Little Bayou Creek	05140206	McCracken	0.0 - 6.5	x	x		x		x				UK; DOE		NS	PS		496607
Massac Creek	05140206	McCracken	3.6 - 4.2	x	x	x	x						RR; TMDL	May-00 - Mar-01	PS	FS		497670
Massac Creek	05140206	McCracken	4.2 - 7.1										Prob	May-00	FS			497670
Middle Fork Massac Creek	05140206	McCracken	0.0 - 6.2	x	x	x							RR	May-94 - May-00	FS			498130
Newton's Creek	05140206	McCracken	0.0 - 7.1	x									KDFWR	Jun-00	maybe			499457
UT to Humphrey Branch	05140206	Ballard	0.0 - 1.3					x	x				DMR	Oct-97 - Sep-01	PS	PS		494756-1.6
UT to Massac Creek	05140206	McCracken	0.0 - 0.4					x	x				DMR	Oct-97 - Sep-01	PS	PS		497670-5.2
UT to Massac Creek	05140206	McCracken	0.0 - 0.7					x	x				DMR	Oct-97 - Sep-01	PS	PS		497670-6.9
UT to Massac Creek	05140206	McCracken	0.0 - 1.7	x	x								DOW	Apr-02	FS			497670-12.1
UT to West Fork Massac Creek	05140206	McCracken	0.0 - 0.8					x	x				DMR	Oct-97 - Sep-01	PS	PS		506438-1.6
West Fork Massac Creek	05140206	McCracken	0.0 - 0.3					x					DMR	Oct-97 - Sep-01	PS			506438
West Fork Massac Creek	05140206	McCracken	0.3 - 5.4	x	x	x							RR	May-00	FS			506438

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				Unit	Milepoints	Fish	Macroinv	Algae	WQ	Fecal	Tissue	DW	WAH	PCR	FC	DWS	
Tennessee River																	
Bear Creek	06040005	Marshall	3.1 - 6.3						x				MSU	May-Oct-00		NS	486553
Beechy Creek	06040005	Calloway	0.2 - 3.2	x	x								TVA	Jun-96 - Aug-00	FS		486757
Blood River	06040005	Calloway	8.3 - 15.7	x	x	x							RR	May-93 - May-00	FS		487489
Clear Creek	06040005	Marshall	1.7 - 2.7		x								Prob	May-00	maybe		489617
Jonathan Creek	06040005	Calloway	6.2 - 18.0	x	x								TVA	Mar-96 - Jun-99	PS		495443
Ledbetter Creek	06040005	Marshall	1.8 - 4.2	x	x								TVA	Mar-96	FS		496144
Little Jonathan Creek	06040005	Calloway	0.0 - 3.3	x	x								TVA	Mar-96 - Jul-99	FS		496775
Panther Creek	06040005	Calloway	0.2 - 5.1	x	x	x							TVA; RR	Jun-96 - Aug-00	FS		500152
Sugar Creek	06040005	Calloway	2.1 - 5.5		x								MSU	Jun-00	FS		504651
Turkey Creek	06040005	Trigg	1.0 - 3.0	x	x								TVA	Mar-96	FS		505586
Wildcat Creek	06040005	Calloway	1.6 - 6.3	x	x								TVA	Jun-96	FS		506731
Angle Creek	06040006	Marshall	0.0 - 0.7		x			x					MSU	May-Oct 00	PS	NS	485958
Bear Creek	06040006	Graves	0.6 - 1.6				x	x					DMR	Oct-97 - Sep-01	PS	PS	486552
Bee Creek	06040006	Calloway	0.0 - 1.8					x					MSU	May-Oct-00		NS	486666
Blizzard Pond	06040006	McCracken	0.0 - 3.7		x			x					MSU	May-Oct-00	maybe	NS	506426-1.4
Blizzard Pond	06040006	McCracken	4.5 - 5.5				x	x					DMR	Oct-97 - Sep-01	PS	PS	506426-1.4
Camp Creek	06040006	McCracken	0.0 - 5.4		x			x					MSU	May-Oct-00	PS	PS	488685
Champion Creek	06040006	McCracken	0.0 - 1.5	x	x								TVA	Jul-96 - Aug-00	NS		489324
Chestnut Creek	06040006	Marshall	0.0 - 3.0		x			x					MSU	May-Oct-00	PS	PS	489424
Clarks River	06040006	McCracken	5.0 - 12.7	x									TVA	Jul-94 - Aug-00	PS		489552
Clarks River	06040006	McCracken	12.7 - 19.3				x	x					KDOW	Apr-00 - Mar-01	FS	FS	489552
Clarks River	06040006	Marshall	26.6 - 28.4		x								Prob	Jun-00	FS		489552
Clarks River	06040006	Marshall	29.3 - 32.2	x									USFWS	Sep-Oct-00	FS		489552
Clarks River	06040006	Marshall	39.5 - 45.4	x									USFWS	Oct-00	FS		489552
Clarks River	06040006	Calloway	48.4 - 50.9		x			x					Prob; TMDL	May-00 - May-01	FS	FS	489552
Clarks River	06040006	Calloway	50.9 - 58.3	x	x	x			x				KDOW; TVA; USFWS	Jun-96 - Oct-00	PS		489552
Clarks River	06040006	Calloway	58.3 - 61.9	x				x					USFWS; MSU	May-Oct-00	PS	PS	489552
Clayton Creek	06040006	Calloway	0.8 - 3.3		x								MSU	Jun-00	PS		489601
Clayton Creek	06040006	Calloway	3.3 - 7.1					x					MSU	May-Oct-00		NS	489601
Cypress Creek	06040006	Marshall	0.1 - 5.7				x	x					KDOW	Apr-00 - Mar-01	FS	FS	490528
Cypress Creek	06040006	Marshall	6.3 - 7.7		x								Prob	May-00		NS	490528
Cypress Creek	06040006	Marshall	7.7 - 9.7	x	x	x							KDOW	Aug-00		NS	490528
Damon Creek	06040006	Calloway	0.0 - 1.8		x			x					MSU	May-Oct-00	NS	NS	490545
Duncan Creek	06040006	Marshall	0.0 - 2.5		x			x					MSU	May-Oct-00	FS	maybe	491300
East Fork Clarks River	06040006	Calloway	0.0 - 2.7	x	x								TVA	May-96 - Aug-00	FS		491450
East Fork Clarks River	06040006	Calloway	5.7 - 6.7					x					DMR	Oct-97 - Sep-01	PS		491450
Guess Creek	06040006	Livingston	0.0 - 2.6	x	x								TVA	Jun-99	PS		493458
Island Creek	06040006	McCracken	1.0 - 5.5	x	x			x					TVA; MSU	Jul 96 - Oct 00	PS	NS	495045
Little Cypress Creek	06040006	Marshall	0.0 - 3.4		x			x					MSU	May-Oct-00	NS	PS	496700
Little Cypress Creek	06040006	Marshall	3.4 - 6.0		x								MSU	Jun-00	NS		496700
Little White Oak Creek	06040006	Marshall	0.9 - 1.9					x	x				DMR	Oct-97 - Sep-01	PS	PS	496895
Martin Creek	06040006	Marshall	0.0 - 0.9					x	x				DMR	Oct-97 - Sep-01	PS	PS	497627

Monitoring Results
Cumberland/Tennessee/Mississippi Basin Management Unit

Stream	Hydro	County	Segment	Sample Type^a						Program^b	Date	Use Support^c				GNIS	
				Unit	Milepoints	Fish	Macroinv	Algae	WQ	Fecal	Tissue	DW	WAH	PCR	FC	DWS	
Tennessee River (cont.)																	
Middle Fork Clarks River	06040006	Calloway	0.0 - 2.7	x	x				x				TVA; MSU	Jun-96 - Oct-00	PS	NS	498115
Middle Fork Clarks River	06040006	Calloway	2.7 - 4.9		x								Prob	May-00	PS		498115
Middle Fork Creek	06040006	Marshall	0.2 - 6.6		x				x				MSU	May- Oct-00	PS	NS	498118
Panther Creek	06040006	Graves	0.0 - 3.1	x	x	x	x	x	x				RR; KDOW; TVA	May-93 - Aug-00	FS	FS	500155
Panther Creek	06040006	Graves	3.1 - 4.2	x									KDFWR	Jun-00	FS		500155
Pryor Branch	06040006	Graves	0.0 - 3.0	x									KDFWR	Jun-00	FS		501399
Reeves Branch	06040006	Marshall	0.0 - 0.3		x								Prob	Jun-00	PS		501706
Rockhouse Creek	06040006	Calloway	0.0 - 4.9	x	x								TVA	Jun-96	FS		502188
Soldier Creek	06040006	Marshall	0.0 - 5.3	x	x	x							RR; TVA	May-94 - Aug-00	FS		503868
Spring Creek	06040006	Graves	0.0 - 1.8	x									KDFWR	Aug-00	PS		504124
Sugar Creek	06040006	Graves	0.0 - 4.0	x									KDFWR	Jun-00	FS		504652
Tennessee River	06040006	McCracken	4.3 - 10.1					x					USGS	Oct-97 - Sep-00	FS		517033
Tennessee River	06040006	McCracken	12.0 - 21.1	x									MSU	Jan-94 - ?	FS		517033
Tennessee River	06040006	McCracken	21.1 - 22.4	x									KDFWR	1998-2001	PS		517033
Trace Creek	06040006	Graves	0.0 - 3.0	x									KDFWR	Jun-94 - Jun-00	FS		505419
UT to Chestnut Creek	06040006	Marshall	0.0 - 0.7					x	x				DMR	Oct-97 - Sep-01	PS	PS	489424-2.8
UT to Old Beaver Dam Slough	06040006	Marshall	0.0 - 0.5		x								Prob	May-00	NS		499795-0.4
Wades Creek	06040006	Marshall	0.0 - 3.8	x	x								TVA	Jun-96	FS		506092
West Fork Clarks River	06040006	Graves	2.6 - 10.1		x				x				KDOW; MSU	May-Oct-00	FS	PS	506426
West Fork Clarks River	06040006	Graves	12.8 - 16.8	x				x					Prob; MSU	May-Oct-00	FS	NS	506426
West Fork Clarks River	06040006	Marshall	16.8 - 19.7		x								MSU	Jun-00	FS		506426
West Fork Clarks River	06040006	Marshall	19.7 - 22.7	x	x	x			x				TVA; KDOW	Jul-96 - Aug-00	FS	PS	506426
West Fork Clarks River	06040006	Calloway	22.7 - 27.3					x					MSU	May-Oct-00	PS		506426
West Fork Clarks River	06040006	Calloway	33.1 - 37.2		x								MSU	May-00	PS		506426
West Fork Clarks River	06040006	Graves	0.0 - 13.8	x									KDFWR	Jul-00	PS		506427
Mississippi River																	
Cane Creek	08010100	Ballard	0.0 - 3.8	x									KDFWR	Jul-00	PS		488772
Hazel Creek	08010100	Ballard	0.0 - 3.7	x									KDFWR	Jul-00	NS		493948
Shawnee Creek Slough	08010100	Ballard	0.0 - 3.0					x	x				KDOW	Apr-00 - Mar-01	NS	FS	503285
Shawnee Creek	08010100	Ballard	7.9 - 8.9					x	x				DMR	Oct-97 - Sep-01	PS	PS	503285
Shawnee Creek	08010100	Ballard	8.9 - 17.9	x	x	x							RR	May-95 - May-00	PS		503285
Bayou de Chien	08010201	Hickman	9.4 - 14.0					x	x				KDOW	Apr-00 - Mar-01	FS	FS	486489
Bayou de Chien	08010201	Fulton	14.0 - 25.9	x	x	x			x				RR; KDOW	Aug-00	FS	FS	486489
Brush Creek	08010201	Graves	0.0 - 8.3	x	x	x							RR	May-95 - May-00	PS		488070
Brush Creek	08010201	Hickman	0.0 - 6.0	x									KDFWR	Jul-00	PS		488071
Cane Creek	08010201	Hickman	0.0 - 5.4	x									KDFWR	Jul-00	PS		488768
Cane Creek	08010201	Graves	3.2 - 4.0					x	x				DMR	Oct-97 - Sep-01	PS	PS	488770
Central Creek	08010201	Carlisle	0.8 - 2.5						x				MSU	May-Oct-00		NS	489283
Cooley Creek	08010201	Graves	0.7 - 2.3						x				MSU	May-Oct-00		NS	490025
Gilbert Creek	08010201	Graves	1.8 - 3.5		x								Prob	Jun-00	NS		492817

Monitoring Results
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Stream	Hydro	County	Segment	Sample Type^a						Program^b	Date	Use Support^c				GNIS
				Unit	Milepoints	Fish	Macroinv	Algae	WQ			WAH	PCR	FC	DWS	
Mississippi River (Cont.)																
Goose Creek	08010201	Graves	0.0 - 4.4	x						KDFWR	Jun-00	PS				493008
Hurricane Creek	08010201	Carlisle	0.0 - 3.7	x						KDFWR	Jul-00	PS				494824
Jackson Creek	08010201	Graves	0.0 - 2.6	x	x	x				RR	May-00	FS				495118
Key Creek	08010201	Graves	0.0 - 1.8	x						KDFWR	Jun-00	maybe				495709
Lick Creek	08010201	Carlisle	0.0 - 2.2	x						KDFWR	Jul-00	maybe				496478
Little Bayou de Chien	08010201	Fulton	0.0 - 2.1		x					Prob	Aug-00	PS				496606
Little Bayou de Chien	08010201	Hickman	10.1 - 12.3		x					Prob	May-00	NS				496606
Little Creek	08010201	Carlisle	0.0 - 10.1	x						KDFWR	Jul-00	NS				496690
Little Cypress Creek	08010201	Hickman	5.8 - 9.3	x	x	x				RR	May-95 - Apr-01	FS				496697
Little Cypress Creek	08010201	Graves	0.0 - 2.0	x						KDFWR	Jun-00	NS				496699
Little Mud Creek	08010201	Fulton	0.0 - 1.8	x						KDFWR	Jul-00	PS				496810
Long Creek	08010201	Carlisle	0.0 - 0.8			x	x			DMR	Oct-97 - Sep-01	PS	PS			497091
Mayfield Creek	08010201	Carlisle	0.0 - 3.4	x						KDFWR	Jul-00	PS				497717
Mayfield Creek	08010201	Carlisle	8.2 - 13.5	x	x	x	x	x		KDOW	Apr-00 - Mar-01	NS		FS		497717
Mayfield Creek	08010201	Carlisle	13.5 - 14.8		x					Prob	Jun-00	NS				497717
Mayfield Creek	08010201	Carlisle	15.0 - 16.2	x						Prob	Jun-00	maybe				497717
Mayfield Creek	08010201	McCracken	17.4 - 32.9	x						KDFWR	Jun-00	PS				497717
Mayfield Creek	08010201	Graves	32.9 - 34.9	x						RR	Oct-00	PS				497717
Mayfield Creek	08010201	Graves	34.9 - 37.6			x	x			KDOW	Apr-00 - Mar-01	NS	FS			497717
Mayfield Creek	08010201	Calloway	57.7 - 59.8		x					Prob	May-00	NS				497717
Mud Creek	08010201	Fulton	0.0 - 6.4	x						KDFWR	Jul-00	NS				498982
Obion Creek	08010201	Fulton	1.3 - 15.8	x		x	x			KDFWR; KDOW	Apr-00 - Mar-01	NS	FS			499767
Obion Creek	08010201	Hickman	25.2 - 35.3	x	x	x				RR; NPS	Jun-00	FS				499767
Obion Creek	08010201	Hickman	38.6 - 42.0		x					NPS	May-00	NS				499767
Obion Creek	08010201	Hickman	42.0 - 47.6		x					NPS	May-02	PS				499767
Obion Creek	08010201	Hickman	47.6 - 53.2	x		x				KDOW	Aug-97; Aug-00	PS				499767
Opossum Creek	08010201	Graves	0.0 - 2.2	x						KDFWR	Jun-00	NS				499959
Sand Creek	08010201	Graves	0.0 - 3.6	x						KSNPC; USI	Oct-94	FS				502901
South Fork Bayou de Chien	08010201	Graves	2.0 - 7.2	x	x	x				RR	May-00	NS				503904
Stovall Creek	08010201	Ballard	0.0 - 3.8	x						KDFWR	Jul-00	FS				504539
Sugar Creek	08010201	Ballard	0.0 - 1.4	x						KDFWR	Jun-00	maybe				504653
Torian Creek	08010201	Graves	0.0 - 0.8			x	x			DMR	Oct-97 - Sep-01	PS	PS			505364
Truman Creek	08010201	Carlisle	2.0 - 3.0			x	x			DMR	Oct-97 - Sep-01	PS	PS			505525
UT to Mayfield Creek	08010201	Graves	1.1 - 3.5		x					Prob	Jun-00	NS				497717-25.6
UT to Mayfield Creek	08010201	McCracken	0.0 - 1.0		x					Prob	Jun-00	NS				497717-24.0
UT to Obion Creek	08010201	Hickman	1.6 - 2.2		x					Prob	May-00	NS				499767-16.3
West Fork Mayfield Creek	08010201	Carlisle	6.0 - 15.9		x					RR	May-95 - Apr-01	FS				506439
Wilson Creek	08010201	Carlisle	0.0 - 2.2			x	x			KDOW	Apr-00 - Mar-01	FS	FS			506898
Wilson Creek	08010201	Carlisle	2.2 - 8.0	x						KDFWR	Jul-00	FS				506898
Caldwell Creek	08010202	Graves	0.0 - 3.1	x						KDFWR	Jun-00	NS				488592
Knob Creek	08010202	Graves	1.1 - 2.2		x					Prob	Jun-00	NS				495836

Monitoring Results
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Stream	Hydro Unit	County	Segment	Sample Type^a						Program^b	Date	Use Support^c				GNIS
				Milepoints	Fish	Macroinv	Algae	WQ	Fecal			WAH	PCR	FC	DWS	
Mississippi River (Cont.)																
Running Slough	08010202	Fulton	0.0 - 15.3	x	x	x				RR	May-00	PS			502469	
Terrapin Creek	08010202	Graves	2.8 - 7.0	x	x	x	x	x	x	KDOW; RR	May-95 - Oct-00	FS	FS		505081	

^aMacrinvert = macroinvertebrates
DW = finished drinking water data

WQ = water quality

Fecal = fecal coliform bacteria

Tissue = fish tissue

^bCoal = coal company data
KDOW = KY Division of Water
Prob = probability sampling of KDOW
UK = University of Kentucky
USGS = U.S. Geological Survey

COE = U.S. Army Corps of Engineers
KDFWR = KY Dept Fish & Wildlife Resources
RR = reference reach program of KDOW
USFS = U.S. Forest Service
ORSANCO = Ohio River Valley Water Sanitation Com

DW = drinking water program of KDOW
KSNPC = KY State Nature Preserves Comm.
TMDL = total maximum daily load development
USFWS = U.S. Fish & Wildlife Service

DMRs = discharge monitoring reports of permittees
MSU = Murray State University
TVA = Tennessee Valley Authority
USI = Univeristy of Southern Illinois
NPS = Nonpoint source program of KDOW

^cWAH = warm water aquatic habitat

PCR = primary contact recreation

FC = fish consumption

DWS = domestic water supply